SOIL SURVEY

Evangeline Parish Louisiana

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
LOUISIANA AGRICULTURAL EXPERIMENT STATION
Issued August 1974

Major fieldwork for this soil survey was done in the period 1964–68. Soil names and descriptions were approved in 1969. Unless otherwise indicated, statements in the publication refer to conditions in the parish in 1969. This survey was made cooperatively by the Soil Conservation Service and the Louisiana Agricultural Experiment Station. It is part of the technical assistance furnished to the Evangeline Soil and Water Conservation District.

Either enlarged or reduced copies of the soil map in this publication can be made by commercial photographers, or they can be purchased on individual order from the Cartographic Division, Soil Conservation Service, United States Department of Agriculture, Washington, D.C. 20250.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms, and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of Evangeline Parish are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the soils of the county in alphabetic order by map symbol and gives the capability classification of each.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about the use and management of the soils from the soil descriptions.

Foresters and others can refer to the section "Woodland and Woodland Grazing," and the descriptions of the mapping units.

Game managers, sportsmen, and others can find information about soils and wildlife in the section "Wildlife" and in the description of the mapping units.

Engineers and builders can find, under "Soils and Engineering," tables that contain test data, estimates of soil properties, and information about soil features that affect engineering practices.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation and Classification of the Soils."

Newcomers in Evangeline Parish may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the section "General Nature of the Parish."

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SOIL SURVEY OF EVANGELINE PARISH, LOUISIANA

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UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE LOUISIANA AGRICULTURAL EXPERIMENT STATION

EVANGELINE PARISH is in south-central Louisiana (fig. 1). The total area of the parish is 427,325 acres. In 1960 the population totaled 31,510.

This parish consists of three major physiographic areas: the level to nearly level terraces, the gently sloping terraces, and the level to nearly level Red River bottom land.

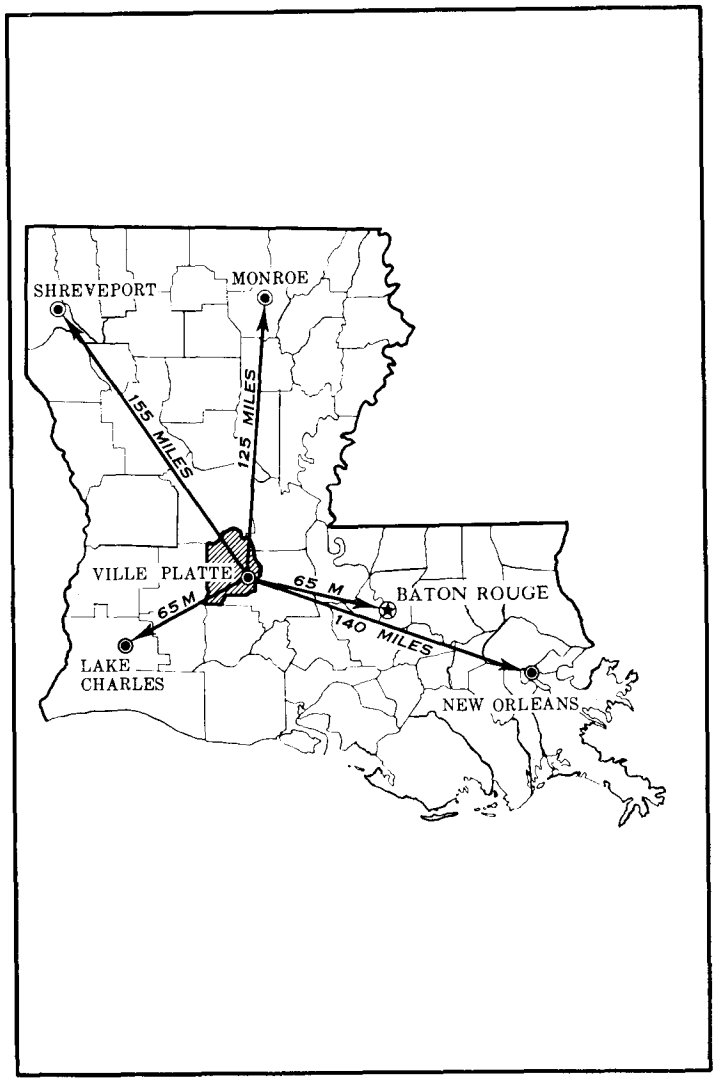

Figure 1.—Location of Evangeline Parish in Louisiana.

The level to nearly level terraces in the southern part of the parish make up about 60 percent of the total area. Most of the acreage is cultivated; rice is the principal crop. Sweetpotatoes, cotton, and soybeans are well suited, however, and are the principal crops on the loess-capped (*3*)[1] eastern edge of these terraces. The soils have a high silt content. They are moderate in natural fertility, and they respond well to fertilization. Wetness is not a major concern. The soils west of this area are wet most of the time and are low in fertility. Nevertheless, they are suited to the flood irrigation used in rice production. Crops respond well to fertilization. Rice is well suited. Where surface drainage is good, the soils are suited to soybeans, sweetpotatoes, and cotton.

The soils of the gently sloping terraces in the northern part of the parish produce most of the pine timber in the parish. The eastern half of this area is capped with old loess (*6*). The soils have a high silt content. Under high level management, they are well suited to sweetpotatoes, soybeans, vegetables, and other cultivated crops. The soils of the western half of this area contain less silt and have a high sand content.

Nearly all of this acreage is wooded. A few cleared fields on broad, nearly level ridgetops are used for rice and soybeans. The soils are low in natural fertility. On some of the wet soils, artificial drainage is required for cultivated crops and pasture.

The level to nearly level Red River bottom land is in the northeastern part of the parish. It consists of loamy soils on natural levees adjacent to Bayou Cocodrie and clayey (buckshot) soils on broad flats adjoining the natural levees. The loamy soils have been cultivated for many years and planted mostly to cotton and corn. They are moderate to high in natural fertility. Some of the clayey soils have been cleared recently and planted to rice and soybeans. They are high in natural fertility and respond fairly well to fertilization. Drainage is required for crops and pasture. Some areas are subject to flooding.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Evangeline Parish, where they are located, and how they can be used. The soil scientists went into

[1] Italic numbers in parentheses refer to Literature Cited, p. 66.

the parish knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparison among the profiles they studied, and they compared these profiles with those in parishes nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Caddo and Duralde, for example, are the names of two soil series. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Guyton silt loam, occasionally flooded, is one of several phases within the Guyton series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this publication was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series. One such kind of mapping unit, a soil complex, is shown on the soil map of Evangeline Parish.

A soil complex consists of areas of two or more soils, so intermingled or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. Generally, the name of a soil complex consists of the names of the dominant soils, joined by a hyphen. Crowley-Vidrine complex is an example.

While a soil survey is in progress, soil scientists take soil samples needed for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soil in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in such a way as to be readily useful to different groups of users, among them farmers, managers of woodland, and engineers.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

The general soil map at the back of this survey shows, in color, the soil associations in Evangeline Parish. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

The map showing soil associations is useful to people who want a general idea of the soils in the parish, who want to compare different parts of the parish, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering works, recreational facilities, and community developments. It is not a suitable map for planning the management of a farm or field, or for selecting the exact location of a road, building, or a similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect their management.

The soil associations in Evangeline Parish are described in the following pages. The terms for texture used in the title for several of the associations apply to the surface layer. For example, in the title for association 6, the word "loamy" refers to the texture of the surface layer.

Level to Nearly Level Soils

Five soil associations consist of level to nearly level, poorly drained soils that are slowly permeable to very slowly permeable. These soils are on broad drainage divides throughout the parish. Slopes are 0 to 3 percent. These associations make up about 69 percent of the parish.

The level soils at high elevations in the northeastern part of the parish formed in pre-Prairie age loess. They are well-developed, grayish, acid, loamy soils that have a low sand content.

The level soils at high elevations in the northwestern part of the parish formed on the Montgomery age alluvial terrace. They are well-developed, grayish, acid, loamy soils that have a moderate sand content.

The level soils at low elevations in the southern part of the parish formed on the Prairie age deltaic alluvial terrace. Grayish, loamy soils that have a moderately dark colored, dense, clayey subsoil occur in the native grassland areas. Grayish, loamy soils that have a light-colored, dense, clayey subsoil occur in wooded areas along the drainageway. Soils along the eastern edge of this terrace are influenced by post-Prairie age loess; they are light and dark colored and have a loamy and clayey subsoil.

1. Duralde-Calhoun association

Soils that have a light-colored loamy subsoil low in sand content

This is an association of acid, level to nearly level, loamy soils on drainage divides in the northern part of the parish. Elevations are dominantly 120 to 130 feet above sea level. The divides range from ¼ mile to 3 miles in width.

This association makes up about 9 percent of the parish. It is about 33 percent Calhoun soils and 53 percent Duralde soils. Tenot soils make up most of the remaining 14 percent.

Calhoun soils occupy broad areas between mounds and microridges. Their surface layer is thick, gray and light-gray silt loam. The subsoil is light brownish-gray or light-gray silty clay loam mottled with yellowish brown. Calhoun soils are poorly drained, slowly permeable, and medium acid to very strongly acid.

Duralde soils occupy mounds, microridges, and areas along streams. Their surface layer is thin, dark grayish-brown silt loam. The upper part of the subsoil is thick, yellowish-brown silt loam. The lower part is dark-brown silty clay loam mottled with grayish brown and yellowish brown. Duralde soils are somewhat poorly drained, slowly permeable, and medium acid to very strongly acid.

Most of the association is used for woodland and pasture. Only a small part is used for crops, mainly cotton, sweetpotatoes, soybeans, and truck crops. The major limitations are wetness and flooding. Unless smoothed, the mounds interfere with tillage. Most farms in this association are 50 to 200 acres in size.

2. Caddo-Messer association

Soils that have a light-colored loamy subsoil moderate in sand content

This is an association of level and nearly level, acid, loamy soils on broad divides in the western part of the parish. Elevations are dominantly 110 to 120 feet above sea level.

This association makes up about 11 percent of the parish. It is about 49 percent Caddo soils and 36 percent Messer soils. Guyton and Glenmora soils make up most of the remaining 15 percent.

Caddo soils occupy broad areas between mounds and microridges. They have a surface layer of thick, gray silt loam mottled with yellowish brown and a subsoil of gray silty clay loam mottled with red and yellowish brown. Caddo soils are medium acid to very strongly acid, poorly drained, and slowly permeable.

Messer soils are on mounds and microridges. Their surface layer is grayish-brown and pale-brown silt loam. The upper part of the subsoil is thick, yellowish-brown silt loam, and the lower part is yellowish-brown silty clay loam mottled with red and gray. Messer soils are moderately well drained and slowly permeable.

Nearly all of the association is pine woodland and most of it is in large tracts owned by timber companies. Small areas are used for cultivated crops, mostly rice and soybeans. A few cleared areas are used for pasture. Most of the woodland is grazed. The principal limitations are low fertility, wetness, and occasional flooding. Unsmoothed mounds interfere with tillage.

3. Crowley-Mowata association

Soils that have a moderately dark colored clayey subsoil

This is an association of nearly level to depressed prairie soils that have a silty surface layer and a clayey subsoil. It is in the southern part of the parish. Elevations are 50 to 70 feet above sea level.

This association makes up about 25 percent of the parish. It is about 38 percent Crowley soils and 34 percent Mowata soils. Vidrine, Mamou, Wrightsville, and Midland soils make up most of the remaining 28 percent.

Crowley soils occupy broad, slightly convex areas at the higher elevations. They have a surface layer of thick, dark grayish-brown and grayish-brown silt loam and a well-defined subsoil of dark-gray silty clay mottled with red. They are poorly drained to somewhat poorly drained and very slowly permeable.

Mowata soils occupy broad areas at low elevations. They have a thick, gray silt loam surface layer that tongues into a dark-gray silty clay subsoil mottled with yellowish brown. Mowata soils are poorly drained and very slowly permeable.

The soils of this association generally are acid in the surface layer and grade to neutral or mildly alkaline in the lower part of the subsoil. All are low in natural fertility.

Almost all of the association is in cultivated crops and pasture. Rice is the principal crop. Farms in this association are 80 to 500 acres in size; the average size is about 200 acres. The principal limitations are wetness, some ponding in the depressions, and unsmoothed mounds that interfere with tillage.

4. Wrightsville-Vidrine association

Soils that have a light-colored clayey subsoil

This is an association of level or nearly level soils that have a loamy surface layer and a clayey subsoil. It is along drainageways, mostly in the southern part of the parish. Elevations are dominantly 35 to 55 feet above sea level.

This association makes up about 16 percent of the parish. It is 55 percent Wrightsville soils and 29 percent Vidrine soils. Acadia, Calhoun, and Crowley soils make up most of the remaining 16 percent.

Wrightsville soils occupy broad areas between mounds. Their surface layer is thick, gray and light-gray silt loam that tongues into the layer beneath. The subsoil is gray or light olive-gray silty clay mottled with yellowish brown. Wrightsville soils are poorly drained and very slowly permeable.

Vidrine soils occupy mounds, smoothed mound areas, and microridges. Their surface layer is thick, brownish silt loam. The subsoil is grayish-brown silty clay mottled with red and yellow. Vidrine soils are somewhat poorly drained and slowly permeable.

The soils of this association are strongly acid near the surface and very strongly acid grading to neutral in the subsoil. All are low in natural fertility.

Nearly all of the association is wooded. Small areas have been cleared and smoothed and are used for crops and pasture. The principal crop is rice. Farms in this association range from about 20 to 100 acres in size. The principal limitations are wetness, some ponding in depressions, low natural fertility, and unsmoothed mounds that interfere with tillage.

5. Patoutville-Crowley-Jeanerette association

Soils that have a moderately dark colored and dark colored, loamy or clayey subsoil

This is an association of level or nearly level, clayey and loamy soils in the southeastern part of the parish. Elevations are dominantly 60 to 75 feet above sea level.

This association makes up about 8 percent of the parish. It is 44 percent Patoutville soils, 24 percent Crowley soils, and 14 percent Jeanerette soils. Midland, Mowata, and Vidrine soils make up most of the remaining 18 percent.

Patoutville soils occupy long, narrow, natural levees and microridges in broad, level areas. Their surface layer is grayish-brown silt loam. The subsoil is dark grayish-brown light silty clay loam mottled with red and yellowish brown. Patoutville soils are somewhat poorly drained and slowly permeable.

Crowley soils occupy areas between the microridges. Their surface layer is thick, dark grayish-brown and grayish-brown silt loam. The subsoil is dark-gray silty clay mottled with red. Crowley soils are poorly drained to somewhat poorly drained and very slowly permeable.

Jeanerette soils occupy broad, level, slightly concave areas at low elevations. Their surface layer is very dark gray silt loam. The subsoil is very dark grayish-brown and dark-gray silty clay loam mottled with light olive brown in the lower part. It contains carbonate concretions. Jeanerette soils are poorly drained and slowly permeable.

Patoutville and Crowley soils are slightly acid to strongly acid in the surface layer and very strongly acid to neutral in the subsoil. They are low in natural fertility. Jeanerette soils are slightly acid to neutral in the surface layer and neutral to mildly alkaline in the subsoil. They are high in natural fertility.

Most of the association is in cultivated crops and pasture. Sweetpotatoes, cotton, and rice are the principal crops. Farms in this association are small, ranging from 20 to 80 acres in size. The principal limitations are wetness in the Patoutville and Crowley soils and ponding on the Jeanerette soils.

Gently Sloping Soils

Three soil associations consist of gently sloping well-drained soils that are moderately permeable to moderately slowly permeable. These soils are on narrow drainage divides and adjoining sides of ridges along streams in the northern and eastern parts of the parish. Slopes range from 1 to 8 percent. These associations make up about 13 percent of the parish.

The gently sloping soils at high elevations in the northeastern part of the parish formed in thick deposits of pre-Prairie age loess. They are well-developed, loamy soils that have a low sand content.

The gently sloping soils at lower elevations in the eastern part of the parish formed in thin deposits of post-Prairie age loess. They are well-developed, brownish, loamy soils that have a fragipan.

The gently sloping soils at high elevations in the northwestern part of the parish formed on the Montgomery and Bentley age alluvial terraces. They are well-developed, brownish and reddish, acid, loamy soils that have a thick solum.

6. Evangeline-Dossman association

Loamy soils that have a reddish subsoil

This is an association of acid, gently sloping, loamy soils that have a high silt content. These soils are in the northern part of the parish. Elevations, which are some of the highest in the parish, are 100 to 140 feet above sea level.

This association makes up about 3 percent of the parish. It is about 86 percent Evangeline soils and about 12 percent Dossman soils. Calhoun and Duralde soils make up most of the remaining 2 percent.

Evangeline soils occupy the sides and broad tops of ridges. Their surface layer is very dark grayish-brown silt loam. The upper part of the subsoil is yellowish-red heavy silt loam and the lower part is brown silty clay loam mottled with red. Evangeline soils are moderately well drained and moderately slowly permeable.

Dossman soils occupy the sides and narrow tops of ridges. Their surface layer is brown silt loam. The subsoil is dark-red and red silty clay loam. Dossman soils are well drained and moderately slowly permeable.

The soils of this association are generally acid throughout the profile. All are low in natural fertility.

Most of the association is wooded. Some small areas have been cleared and are planted to crops and pasture plants. Farms in this association are 50 to 300 acres in size; the average size is about 100 acres. The principal limitations are the erosion hazard and low natural fertility.

7. Olivier association

Loamy soils that have a brownish subsoil

This is an association of acid, gently sloping, loamy soils that have a high silt content. These soils are in the eastern part of the parish. Elevations are dominantly 55 to 75 feet above sea level.

This association makes up about 2 percent of the parish. It is about 78 percent Olivier soils. Loring, McKamie, and Muskogee soils make up the remaining 22 percent.

Olivier soils occupy the sides and broad tops of ridges. Their surface layer is brown silt loam. The subsoil is dark yellowish-brown light silty clay loam mottled with gray in the upper part; the lower part is a dark yellowish-brown, heavy silt loam fragipan that is mottled with gray. Olivier soils are somewhat poorly drained and slowly permeable.

The soils of this association are generally strongly acid to medium acid. All are low to moderate in natural fertility.

Nearly all of the association is in crops and pasture. The major crops are sweetpotatoes and cotton. Farms in this association are dominantly 20 to 40 acres in size, but some are as large as 200 acres. The principal limitation is the erosion hazard.

8. Glenmora-Ruston association

Loamy soils that have a brownish and reddish subsoil

This is an association of acid, gently sloping, loamy soils in the western part of the parish. Elevations are dominantly 100 to 130 feet above sea level.

This association makes up about 8 percent of the parish. It is about 81 percent Glenmora soils and 13 percent Ruston soils. Savannah, Caddo, and Messer soils make up the remaining 6 percent.

Glenmora soils occupy the sides and broad tops of ridges. Their surface layer is dark grayish-brown silt loam. The subsoil is yellowish-brown silty clay loam that is mottled with red and gray in the lower part. Glenmora soils are moderately well drained and slowly permeable.

Ruston soils occupy the sides and narrow tops of ridges, small circular hills, and hillsides. Their surface layer is dark grayish-brown fine sandy loam, and the subsoil is yellowish-red sandy clay loam. Ruston soils are well drained and moderately permeable.

The soils of this association are generally medium acid to very strongly acid in the surface layer and very strongly acid in the subsoil. They are low to very low in natural fertility.

Most of the association is wooded. Small areas have been cleared and are used for crops and pasture. Farms in this association are 50 to 300 acres in size. The principal limitations are the erosion hazard and low natural fertility.

Moderately Steep Soils

One soil association consists of moderately steep, well-drained soils that are very slowly permeable to rapidly permeable. These soils are on the sides of the dissected valley walls in the northern part of the parish. Slopes are short and irregular and range from 8 to 30 percent. This association makes up about 3 percent of the parish.

Clayey, loamy, and sandy soils that have a reddish subsoil occur in this association. The clayey soils are on the highly dissected Prairie and Montgomery terraces. They are highly oxidized and are leached to a depth of 3 feet or more. The loamy soils are on highly dissected, pre-Prairie age loess bluffs. They are oxidized and leached throughout the profile. The sandy soils are on the freshly exposed, sandy Montgomery and Bentley terraces. Some of the sandy soils are underlain by gravel deposits.

9. McKamie-Dossman-Kenney association

Well-drained soils that have a reddish clayey, loamy, or sandy subsoil

This is an association of acid, moderately steep, clayey, loamy, and sandy soils in the northern part of the parish. Elevations are dominantly 40 to 120 feet above sea level.

This association makes up about 3 percent of the parish. It is about 47 percent McKamie soils, 23 percent Dossman soils, and 17 percent Kenney soils. Muskogee and Ruston soils make up most of the remaining 13 percent.

McKamie soils occupy the short sides and narrow tops of ridges. They have a dark grayish-brown loamy to clayey surface layer and a red clayey subsoil. They are well drained and very slowly permeable.

Dossman soils occupy the short, upper slopes of the valley walls. Their surface layer is brown silt loam, and the subsoil is reddish silty clay loam. They are well drained and moderately slowly permeable.

Kenney soils are on the short, lower slopes of the valley walls. Their surface layer is grayish-brown fine sand and the subsoil is dark reddish-brown fine sand. Kenney soils are well drained and have moderately rapid permeability.

The soils of this association are mostly medium acid to very strongly acid; in places the McKamie soils range to mildly alkaline below a depth of 30 inches.

Almost all of the association is wooded. Some areas have been developed for recreation. The principal limitations are moderately steep slopes, unfavorable soil texture, the erosion hazard, and low fertility.

Soils of the Flood Plains

Four soil associations consist of level to nearly level, poorly drained soils on flood plains. These soils occur in a broad area on the bottom land of the Red River in the northeastern part of the parish and in the frequently flooded, narrow stream bottoms throughout the parish. These associations make up about 15 percent of the parish.

Soils that formed in recent loamy alluvial deposits are on the natural levees of the Red River bottom land. Moderately well developed, loamy soils also occur in these areas. Clayey soils high in carbonates formed in the backwater areas in recent, clayey, alluvial Red River deposits. Poorly drained, frequently flooded, grayish loamy soils formed on small stream bottoms throughout the parish in late Prairie age or early recent local alluvial deposits. The well-drained, frequently flooded, brownish, loamy soils on small stream bottoms in the northern part of the parish also formed in recent local alluvial deposits.

10. Gallion association

Well-drained, loamy soils of the Red River bottom land

This is an association of level or nearly level, loamy soils on natural levees of Bayou Cocodrie in the northern part of the parish. Elevations are dominantly 45 to 55 feet above sea level.

This association makes up about 3 percent of the parish. It is about 98 percent Gallion soils. Latanier soils make up the remaining 2 percent.

Gallion soils occupy broad natural levees at the higher elevations near the bayou. Their surface layer is dark-brown silt loam or silty clay loam. The subsoil is red silty clay loam. They are well drained and moderately slowly permeable. They are medium acid to neutral in the surface layer and neutral to moderately alkaline in the subsoil.

Practically all of the association is used for crops, chiefly cotton, corn, and soybeans. Farms are dominantly 100 to 300 acres in size. There are no major limitations.

11. Moreland-Latanier association

Somewhat poorly drained, clayey soils of the Red River bottom land

This is an association of level, clayey soils on broad flats of the bottom land in the northeastern part of the parish. Elevations are dominantly 35 to 45 feet above sea level. Most of the association is subject to occasional flooding.

This association makes up about 6 percent of the parish. It is about 60 percent Moreland soils and 19 percent Latanier soils. Gallion and Perry soils make up the remaining 21 percent.

Moreland soils occupy some of the lowest local elevations. They have a dark-brown, clayey surface layer and a dark reddish-brown, clayey subsoil. They are somewhat poorly drained and very slowly permeable. Moreland soils are neutral to moderately alkaline throughout the profile.

Latanier soils occupy some of the highest elevations. They have a dark-brown, clayey surface layer and upper part of the subsoil. The lower part of the subsoil is dark reddish brown and loamy to clayey. Latanier soils are somewhat poorly drained and very slowly permeable. They are neutral to moderately alkaline throughout the profile.

Most of the association is mixed hardwood forest. Many areas are being cleared for soybeans and pasture. Rice is a well suited crop. The principal limitations are wetness, poor tilth, and occasional flooding in winter and early in spring. Small areas are flooded frequently, and the water is 1 to 4 feet deep.

12. Basile-Frost-Guyton association

Frequently flooded, poorly drained, loamy soils on small stream bottoms

This is an association of level, poorly drained, loamy soils on small stream bottoms throughout the parish. These soils are subject to flooding. Elevations are dominantly 25 to 100 feet above sea level.

This association makes up about 5 percent of the parish. It is about 30 percent Basile soils, 15 percent Guyton soils, and 24 percent Frost soils. Cascilla, Wrightsville, and other soils make up the remaining 31 percent.

Basile soils have a gray silt loam surface layer and a gray silty clay loam subsoil that is mottled with yellowish brown. They are poorly drained and slowly permeable. Basile soils are very strongly acid to medium acid in the surface layer and medium acid to moderately alkaline in the subsoil.

Guyton soils have a light brownish-gray silt loam surface layer and a light brownish-gray silty clay loam subsoil that is mottled with yellowish brown. They are poorly drained and very slowly permeable. Guyton soils are very strongly acid to extremely acid throughout the profile.

Frost soils have a dark grayish-brown and gray silt loam surface layer and a dark-gray silty clay loam subsoil that is mottled with yellowish brown and light gray. They are poorly drained and slowly permeable. Frost soils are medium acid to very strongly acid in the surface layer and strongly acid to extremely acid in the subsoil.

Nearly all of the association is wooded and is in large tracts owned by timber companies. Frost soils are occasionally flooded for short periods, but can be managed for a few cultivated crops and pasture plants. The rest are not generally suited to cultivated crops because they are frequently flooded. The principal limitations are wetness and flooding.

13. Cascilla association

Frequently flooded, well-drained, loamy soils on small stream bottoms

This is an association of acid, nearly level to level, well-drained, loamy soils on bottom land in the northern part of the parish. These soils are subject to frequent flooding. Elevations are dominantly 45 to 100 feet above sea level.

This association makes up about 1 percent of the parish. It is about 92 percent Cascilla soils. Guyton soils make up the remaining 8 percent.

Cascilla soils occupy natural levees along streams in narrow valleys. They have a dark-brown silt loam surface layer and a brown and dark-brown silt loam subsoil. They are well drained and moderately permeable.

Nearly all of this association is wooded. Small areas have been cleared and are used for pasture and hay crops. The principal limitations are flooding and low fertility.

Descriptions of the Soils

This section describes the soil series and mapping units in Evangeline Parish. Each soil series is described in considerable detail, and then, briefly, each mapping unit in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit, it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the soil profile, that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familar to the layman. The second, detailed and in technical terms, is for scientists, engineers, and others who need to make thorough and precise studies of soils. Unless it is other-

wise stated, the colors given in the descriptions are those of a moist soil.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. The suitability of each soil for crops and pasture, wildlife, and woodland is discussed in the mapping unit description.

The acreage and proportionate extent of each mapping unit are shown in table 1. Many of the terms used in describing soils can be found in the Glossary at the end of this survey, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual (7).

Acadia Series

The Acadia series consists of somewhat poorly drained, very gently sloping soils that have a clayey subsoil. These soils are in long, narrow areas along drainageways in the southern half of the parish.

In a representative profile, the surface layer is dark grayish-brown silt loam 5 inches thick. The subsurface layer is grayish-brown silt loam 4 inches thick. The subsoil is brownish-yellow silty clay loam that grades to light-gray clay at a depth of 30 inches.

Acadia soils are associated with Muskogee, McKamie, Wrightsville, Vidrine, Crowley, and Basile soils. They are more poorly drained than Muskogee and McKamie soils. They are better drained than Wrightsville, Crowley, and Basile soils. They have more clay in the upper part of the subsoil than Vidrine soils.

Representative profile of Acadia silt loam, 1 to 3 percent slopes, about 4 miles east-southeast of Mamou, 220 feet north of cross fence, 30 feet east of field road, in the center of sec. 39, T. 5 S., R. 1 E.:

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) silt loam; many, fine, faint, very dark brown streaks and mottles; moderate, fine, granular structure; friable; few, medium, hard, black concretions; medium acid; abrupt, wavy boundary.

A2—5 to 9 inches, grayish-brown (2.5Y 5/2) silt loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; friable; medium acid; abrupt, wavy boundary.

B1—9 to 19 inches, brownish-yellow (10YR 6/6) silty clay loam; common, medium, distinct, light brownish-gray (2.5Y 6/2) mottles and few, medium, faint, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; friable; few, fine, hard, black concretions; very strongly acid; clear, wavy boundary.

B2tg—19 to 30 inches, gray (10YR 6/1) clay; common, medium, distinct, yellowish-brown (10YR 5/6) mottles and few, fine, prominent, red mottles; weak, medium and fine, angular blocky structure; firm; few clay films and shiny ped surfaces; very strongly acid; clear, wavy boundary.

B3g—30 to 50 inches, light-gray (10YR 6/1) clay; common, medium, distinct, light yellowish-brown (10YR 6/4) and yellowish-brown (10YR 5/6) mottles; weak, medium, angular blocky structure; firm; very strongly acid; clear, wavy boundary.

Cg—50 to 70 inches, light-gray (10YR 6/1) clay; many, medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; firm; slightly acid.

The A1 or Ap horizon ranges from dark grayish brown (10YR 4/2) to grayish brown (10YR 5/2) in color and from 4 to 8 inches in thickness. Where present, the A2 horizon has hues of 2.5Y or 10YR, value of 5 through 7, and chroma of 2 through 4; it is 2 to 6 inches thick. The B1 horizon is brownish yellow (10YR 6/6) or yellowish brown (10YR 5/4, 5/6) mottled with gray and is 4 to 14 inches thick. It ranges from silt loam to silty clay loam. The Btg horizon is gray (10YR 5/1, 6/1) mottled with yellowish brown and red and ranges from silty clay loam to clay. The C horizon is gray silty clay loam mottled with red or yellow and is stratified in places. The A horizon is very strongly acid to medium acid, and the B horizon is strongly acid to very strongly acid. The C horizon is mildly alkaline in places.

Acadia silt loam, 1 to 3 percent slopes (AcB).—This very gently sloping soil is in long, narrow areas adjacent

TABLE 1.—*Approximate acreage and proportionate extent of the soils*

Mapping unit	Area	Extent	Mapping unit	Area	Extent
	Acres	*Percent*		*Acres*	*Percent*
Acadia silt loam, 1 to 3 percent slopes	5, 250	1. 3	Latanier clay	5, 150	1. 3
Basile-Wrightsville complex, frequently flooded	10, 750	2. 5	Loring silt loam, 3 to 5 percent slopes, eroded	375	. 1
Caddo-Messer complex	29, 500	7. 0	Mamou silt loam, 1 to 3 percent slopes	6, 150	1. 4
Caddo-Messer complex, undulating	11, 500	2. 7	McKamie soils, 8 to 30 percent slopes	4, 850	1. 1
Calhoun silt loam	5, 150	1. 3	Midland silty clay loam	7, 750	1. 8
Calhoun-Duralde complex	17, 500	4. 1	Moreland clay	15, 250	3. 5
Cascilla silt loam, frequently flooded	5, 850	1. 4	Mowata silt loam	41, 300	9. 6
Crowley-Vidrine complex	56, 500	13. 3	Muskogee-McKamie complex, 3 to 8 percent slopes, eroded	3, 850	. 9
Dossman silt loam, 1 to 5 percent slopes, eroded	1, 750	. 4	Olivier silt loam, 1 to 3 percent slopes, eroded	4, 950	1. 2
Dossman soils, 8 to 30 percent slopes	2, 950	. 7	Patoutville silt loam, 1 to 3 percent slopes, eroded	2, 950	. 7
Duralde silt loam, 1 to 3 percent slopes	13, 900	3. 2	Patoutville-Crowley complex	19, 500	4. 5
Evangeline silt loam, 1 to 3 percent slopes, eroded	7, 900	1. 8	Perry clay, frequently flooded	5, 050	1. 2
Evangeline silt loam, 3 to 5 percent slopes, eroded	4, 850	1. 1	Ruston fine sandy loam, 1 to 5 percent slopes	2, 950	. 6
Frost silt loam, occasionally flooded	5, 150	1. 3	Ruston fine sandy loam, 5 to 8 percent slopes	1, 900	. 4
Gallion silt loam	6, 750	1. 6	Savannah very fine sandy loam, 1 to 3 percent slopes	1, 850	. 4
Gallion silty clay loam	4, 250	1. 0	Tenot silt loam, 1 to 3 percent slopes	2, 050	. 4
Glenmora silt loam, 1 to 3 percent slopes	28, 500	6. 7	Tenot-Calhoun complex	5, 100	1. 2
Guyton silt loam, occasionally flooded	7, 100	1. 6	Wrightsville-Vidrine complex	58, 350	13. 7
Guyton-Cascilla complex, frequently flooded	5, 900	1. 4			
Jeanerette silt loam	4, 850	1. 1	Total	427, 325	100. 0
Kenney fine sand, sandy subsoil variant, hilly	2, 150	. 5			

to drainageways in the southern half of the parish. It is wet for extended periods after rains because permeability is very slow in the clayey subsoil. This soil has the profile described as representative of the series. Available water capacity is moderate. Generally, the content of nitrogen and phosphorus is very low, and the content of potassium is low. The surface layer is medium acid to very strongly acid, and the subsoil is strongly acid to very strongly acid. Runoff is medium.

Included in mapping are small areas of Wrightsville, Vidrine, Muskogee, McKamie, and Crowley soils.

About 75 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soil is saturated in winter and early in spring, but lacks adequate moisture for plants during dry periods late in summer and in fall in some years. The major limitations are low fertility, the erosion hazard, and wetness.

Crops and pasture.—This soil is moderately well suited to most locally grown crops and pasture plants. Suitable crops are rice, soybeans, cotton, and sweetpotatoes. Rice is the principal crop. Suitable pasture plants are common bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover.

The soil is fairly well suited to flood irrigation. It is fairly easy to keep in good tilth, but if it is under continuous cultivation, a plowpan is likely to form. Land smoothing and water leveling increase the efficiency of flood irrigation. Where row crops are grown, proper row direction is needed to control erosion and conserve moisture. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIe–1.

Wildlife.—Open areas, grainfields, and pasture on this soil provide habitat suited to quail, dove, and rabbit. The wooded areas are suited to deer and squirrel. Planting the edge of fields that border wooded areas to winter pasture plants provides a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. This soil is poorly suited habitat for crawfish, duck, geese, snipe, and other wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, and sweetgum. Trees suitable for planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 86. Seeding mortality is slight. Restrictions on the use of equipment are moderate in winter and spring because of wetness.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, leaving the uniolas, rushes, sedges, and low panicums. The potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Basile Series

The Basile series consists of poorly drained soils that are loamy throughout the profile. These soils are at low elevations on narrow flood plains, mostly in the southern half of the parish.

In a representative profile, the surface layer is gray silt loam 16 inches thick. The subsurface layer is light-gray silt loam 6 inches thick. The subsoil, to a depth of 50 inches, is silty clay loam. It is gray mottled with yellowish brown in the upper 10 inches and is light olive gray below.

Basile soils are associated with Cascilla, Frost, Guyton, and Wrightsville soils. They are more poorly drained than Cascilla soils, are less acid in the subsoil than Guyton and Frost soils, and are less clayey in the subsoil than Wrightsville soils.

The Basile soils in Evangeline Parish are mapped only with Wrightsville soils.

Representative profile of Basile silt loam in an area of Basile-Wrightsville complex, frequently flooded, about 6 miles northwest of Mamou, 125 feet north of road, 48 feet west of Bayou Nezpique, SW¼SW¼ sec. 12, T. 4 S., R. 1 W.:

A1—0 to 4 inches, gray (10YR 5/1) silt loam; weak, fine, granular structure; friable; common fine roots; few fine pores; common, fine, soft, black concretions; very strongly acid; clear, wavy boundary.

A21g—4 to 16 inches, gray (10YR 6/1) silt loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, fine, subangular blocky structure; friable; few fine roots; common fine pores; few, fine, soft, brown concretions; very strongly acid; gradual, wavy boundary.

A22g—16 to 22 inches, light-gray (10YR 7/2) silt loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; firm; many fine pores lined with white silt; few, fine, soft, brown concretions; very strongly acid; abrupt, irregular boundary.

B21tg—22 to 32 inches, gray (5Y 6/1) silty clay loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; few fine pores lined with clay; patchy thin clay films on ped surfaces; tongues of overlying horizon make up about 40 percent of this layer; few, fine, soft, black concretions; neutral; gradual, wavy boundary.

B22tg—32 to 50 inches, light olive-gray (5Y 6/2) silty clay loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; few fine pores; continuous thick clay films on ped surfaces; common, fine, soft, black concretions; moderately alkaline; gradual, wavy boundary.

B3—50 to 88 inches, light olive-gray (5Y 6/2) silt loam; few, medium, prominent, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; firm; few fine pores; few, medium, round, hard carbonate concretions; few, fine, soft, brown concretions; moderately alkaline.

The A1 horizon is dark gray (10YR 4/1) or gray (10YR 5/1). It is silt loam, but ranges to silty clay loam as a result of overwash. The A2 horizon is gray (10YR 5/1, 6/1) or light gray (10YR 7/2) mottled with yellowish brown. The Btg horizon is gray (10YR 5/1, 6/1; 5Y 5/1, 6/1), light olive gray (5Y 6/2), or light brownish gray (10YR 6/2) mottled with yellowish brown. It ranges from silt loam to silty clay loam. The A horizon is very strongly acid to medium acid, and the B horizon is medium acid to moderately alkaline. The B horizon typically has carbonate concretions.

Basile-Wrightsville complex, frequently flooded (Bw).—These nearly level soils are on long, narrow flood plains at low elevations in the southern half of the parish. They are wet for extended periods because they are frequently flooded and have a high water table.

The poorly drained Basile soil makes up about 60 percent of the acreage. It has the profile described as representative of the series. It is very strongly acid in the surface layer and neutral to moderately alkaline in the subsoil. It is generally very low in nitrogen and phosphorus content and low in potassium. Permeability is slow, and runoff is very slow.

The poorly drained Wrightsville soil makes up about 30 percent of the acreage. The surface layer commonly is gray silt loam, but ranges to gray silty clay loam overwash as much as 15 inches thick. The subsoil is gray or light olive-gray silty clay mottled with yellowish brown. This soil is medium acid in the surface layer and very strongly acid to alkaline in the subsoil. Generally, it is very low in nitrogen and phosphorus content and low in potassium. Permeability is very slow, and runoff is slow. Available water capacity is moderate.

Included in mapping are small areas of Cascilla soils along stream channels, and small areas of Acadia soils along the valley walls.

Most of the acreage is wooded. Flooding commonly lasts 3 to 14 days in winter and spring. Moisture is adequate for plants in most years. The major limitations are frequent flooding, wetness, and low fertility.

Crops and pasture.—Flooding is too severe for cultivated crops in most years. Small areas have been cleared and are used for pasture. Common bermudagrass is a suitable pasture plant that tolerates flooding fairly well. Response to fertilizer is good. Lime is generally needed. Capability unit Vw–1.

Wildlife.—The open areas generally provide poor habitat for quail, dove, and rabbit, mainly because growing grain crops is difficult on these flooded soils. Wooded areas are suited to deer, rabbit, and squirrel. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. Both soils in this mapping unit are well suited as habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are baldcypress, laurel oak, sweetgum, and bitter pecan. Trees suitable for commercial planting are sweetgum, sycamore, and cottonwood. Potential productivity is moderate. The site index for sweetgum is 70. Seedling mortality is severe. Restrictions on the use of equipment are severe because of poor trafficability and frequent flooding. Wooded areas should not be used for grazing.

Caddo Series

The Caddo series consists of poorly drained, nearly level, acid soils that are slowly permeable. These soils are in broad areas at higher elevations in the northwestern part of the parish.

In a representative profile, the surface layer is gray silt loam 4 inches thick. The subsurface layer is gray silt loam 13 inches thick. The subsoil is gray silty clay loam mottled with yellowish brown and red to a depth of more than 50 inches.

Caddo soils are associated with Messer, Glenmora, and Guyton soils. They are more poorly drained and grayer than Messer and Glenmora soils. They differ from Guyton soils in having red mottles.

The Caddo soils in Evangeline Parish are mapped only with Messer soils.

Representative profile of Caddo silt loam in an area of Caddo-Messer complex, about 10 miles northwest of Pine Prairie, 120 feet northwest of road, on the northwest edge of NE¼ sec. 5, T. 3 S., R. 2 W.:

A1—0 to 4 inches, gray (10YR 5/1) silt loam; few, fine, faint, light-gray mottles; weak, fine, granular structure; friable; many fine roots; few fine pores; few, fine, soft, brown concretions; strongly acid; clear, wavy boundary.

A2g—4 to 17 inches, gray (10YR 6/1) silt loam; common, medium, yellowish-brown (10YR 5/6) mottles; very weak, fine, subangular blocky structure to massive; slightly firm, slightly brittle; few fine roots; many fine and medium tubular pores lined with white silt; few, medium, hard, black and brown concretions; few tongues extending to a depth of 43 inches; very strongly acid; abrupt, irregular boundary.

B21tg&A2g—17 to 31 inches, gray (10YR 6/1) silty clay loam; common, medium, prominent, red (2.5YR 4/8) mottles and distinct yellowish-brown (10YR 5/6) mottles; A2g horizon tongues make up 45 percent of the mass; moderate, medium, subangular blocky structure; firm; few fine roots; common fine pores; patchy thin clay films on horizontal ped faces and in pores; silt coatings on vertical ped faces; few, medium, hard, black and brown concretions; very strongly acid; gradual, wavy boundary.

B22tg—31 to 43 inches, gray (10YR 6/1) silty clay loam; many, medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots; few fine pores; continuous thick clay films on ped surfaces; few silt coatings on vertical ped faces; few, medium, hard, brown concretions; very strongly acid; gradual, wavy boundary.

B33tg—43 to 56 inches, gray (10YR 6/1) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; few fine pores; continuous thin clay films on ped surfaces and in pores; silt coatings on vertical ped surfaces; few, medium, hard, brown concretions; strongly acid; gradual, wavy boundary.

B24tg—56 to 82 inches, light olive-gray (5Y 6/2) silty clay loam; common, medium, faint, olive (5Y 5/3) mottles; moderate, coarse, prismatic structure parting to moderate, coarse, subangular blocky; very firm; continuous thin clay films on horizontal ped surfaces; thick silt coatings on vertical ped surfaces; few, medium, hard, brown concretions; slightly acid; gradual, wavy boundary.

B3g—82 to 94 inches, light-gray (5Y 7/1) silt loam; few, medium, faint, olive (5Y 5/3) mottles; moderate, medium, subangular blocky structure; firm; patchy thin clay films on ped surfaces; patchy black stains on ped faces; few, medium, soft, black and brown concretions; neutral.

The A1 horizon is gray (10YR 5/1, 6/1) and ranges from 3 to 7 inches in thickness. The A2g horizon is gray (10YR 6/1), light gray (10YR 7/1, 7/2), or light brownish gray (10YR 6/2) mottled with yellowish brown. Tongues of the A2g horizon extend well into the Btg horizon. The Btg horizon is gray (10YR 5/1, 6/1) mottled with red, yellowish brown, and olive and ranges from silt loam to silty clay loam. The A horizon is strongly acid to very strongly acid. The Btg horizon is slightly acid to very strongly acid. The B3 horizon is neutral.

Caddo-Messer complex (Ca).—These nearly level, poorly drained and moderately well drained soils are in broad areas in the northwestern part of the parish. The wet Caddo soil makes up about 60 percent of the acreage, and the Messer soil 30 percent.

The wet Caddo soil has the profile described as representative of the series. It is strongly acid to very strongly

acid in the surface layer and very strongly acid in the subsoil. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. Permeability and runoff are slow. Available water capacity is high.

The Messer soil is wet for a short but significant time after a rain. It occurs on mounds and microridges. The surface layer is silt loam. It is grayish brown in the upper part and pale brown in the lower part. The upper part of the subsoil is light yellowish-brown silt loam, and the lower part is yellowish-brown silty clay loam mottled with red and gray. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. This soil is strongly acid in the surface layer and very strongly acid in the subsoil. Permeability is slow, and runoff is medium. Available water capacity is high.

Included in mapping are small areas of Glenmora and Guyton soils.

About 90 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soil on the intermounds is saturated in winter and early in spring, but lacks adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are moderately well suited to most locally grown crops and pasture plants. Suitable crops are rice, soybeans, grain sorghum, and cotton. Suitable pasture plants are bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soils are well suited to flood irrigation. They are fairly easy to work and to keep in good tilth, but a crust is likely to form after heavy rains. If the soils are under continuous cultivation, a plowpan is likely to form. The small mounds interfere with tillage.

Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice generally overcomes the effects of crusting. Subsoiling and chiseling help prevent the formation of a plowpan.

Land smoothing and water leveling increase the efficiency of flood irrigation and improve drainage. Proper row direction is needed to improve drainage where row crops are grown. Response to fertilizer is good. Lime is needed. Capability unit IIIw–1.

Wildlife.—There are only a few, small open areas on these soils. The Messer soil is suitable habitat for quail, dove, rabbit, and other openland wildlife. The Caddo soil provides poor habitat. The Caddo soil is well suited and the Messer soil is suited to woodland management for rabbit, deer, and squirrel. Small open areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. Both soils are well suited as habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are loblolly and longleaf pines, oak, and sweetgum. Trees suitable for planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 91 on both soils. Seedling mortality is moderate on the Caddo soil and slight on the Messer soil. Because of wetness in winter and spring, restrictions on the use of equipment are severe for the Caddo soil and moderate for the Messer soil.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums are left. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Caddo-Messer complex, undulating (CaB).—These poorly drained and moderately well drained soils are in the northwestern part of the parish. The Caddo soil makes up about 40 percent of the acreage, and the Messer soil 35 percent.

The wet Caddo soil occurs in the intermound and swale areas. The surface layer is thick, gray silt loam, and the subsoil is gray silty clay loam mottled with red and yellowish brown. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. Permeability and runoff are slow. Available water capacity is high.

The Messer soil, which is wet for a short but significant time after a rain, is on mounds and small ridges. It has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is strongly acid, and the subsoil is very strongly acid. Permeability is slow, and runoff is medium. Available water capacity is high.

Included in mapping are fairly large areas of Glenmora and Guyton soils that make up 25 percent of the mapping unit.

About 90 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soils are saturated in winter and spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness, the erosion hazard, and low fertility.

Crops and pasture.—These soils are moderately well suited to most locally grown crops and pasture plants. Suitable crops are rice, soybeans, grain sorghum, and cotton. Suitable pasture plants are bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

These soils are fairly well suited to flood irrigation. They are fairly easy to work and to keep in good tilth, but a crust is likely to form after a heavy rain. If the soils are under continuous cultivation, a plowpan is likely to form. The small mounds interfere with tillage.

Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice helps to overcome the effects of crusting. Subsoiling and chiseling help prevent the formation of a plowpan.

Land smoothing and water leveling increase the efficiency of flood irrigation and improve overall drainage. Where row crops are grown, proper row direction is needed to control erosion, conserve moisture, and improve drainage.

Response to fertilizer is good. Lime is needed. Capability unit IIIw–2.

Wildlife.—Open areas are few and small on these soils but provide habitat suited to quail, dove, rabbit, and other openland wildlife. The soils are well suited to woodland management for rabbit, deer, and squirrel. Small open areas planted to winter pasture plants furnish a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. Both soils are suitable habitat for duck, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—About 90 percent of this acreage is wooded. The principal trees are loblolly and longleaf pines, oak, and sweetgum. Trees suitable for planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine for both soils is 91. Seedling mortality is moderate on the Caddo soil and slight or moderate on the Messer soil. Because of wetness in winter and spring, restrictions on the use of equipment are severe on the Caddo soil and moderate on the Messer soil.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums are left. Potential forage production per acre for woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Calhoun Series

The Calhoun series consists of poorly drained, level soils that are loamy throughout the profile. These soils occur in broad areas at the higher elevations.

In a representative profile, the surface and subsurface layers are gray silt loam; their combined thickness is 20 inches. The subsoil is light brownish-gray silty clay loam mottled with yellowish brown to a depth of more than 50 inches.

Calhoun soils are associated with Duralde, Evangeline, and Frost soils in the northern part of the parish and with Olivier, Patoutville, and Wrightsville soils in the eastern part. They are more poorly drained and grayer than Duralde, Evangeline, Olivier, and Patoutville soils. They do not have the moderately dark subsoil ped coatings that are typical of Frost soils, and they have less clay in the subsoil than Wrightsville soils.

Representative profile of Calhoun silt loam about 8 miles southeast of Ville Platte, 750 feet south of highway, 185 feet east of gravel road near the center of sec. 25, T. 5 S., R. 2 E.:

A1—0 to 3 inches, gray (10YR 5/1) silt loam; few, fine, distinct, yellowish-brown mottles; weak, fine, granular structure; very friable; many fine roots; few, fine, hard, black concretions; strongly acid; clear, wavy boundary.

A2g—3 to 20 inches, gray (10YR 6/1) silt loam; common, fine, faint, dark grayish-brown mottles and distinct yellowish-brown mottles; weak, medium, subangular blocky structure; friable; common fine roots; many fine pores; common, medium, soft, brown concretions; few tongues extending to a depth of 28 inches; very strongly acid; abrupt, irregular boundary.

B21tg—20 to 29 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; friable; few fine roots; common fine pores; patchy thin clay films on ped surfaces and in pores; common, medium, hard, black and brown concretions; very strongly acid; gradual, wavy boundary.

IIB22tg—29 to 70 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots; few fine pores; patchy thin clay films on ped surfaces and in pores; common, patchy, black stains along roots and on ped surfaces; common, medium, hard, black and brown concretions; strongly acid; gradual, wavy boundary.

IIB3g—70 to 80 inches, light brownish-gray (2.5Y 6/2) silt loam; common, medium, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; firm; silt coats on vertical ped faces; neutral.

The A1 horizon is gray (10YR 5/1, 6/1) and ranges from 3 to 7 inches in thickness. The A2g horizon is gray (10YR 6/1), light gray (10YR 7/1, 7/2), or light brownish gray (10YR 6/2) mottled with brown and yellowish brown. Tongues of the A2 horizon extend well into the Btg horizon. The Btg horizon is light brownish gray (2.5Y 6/2), gray (10YR 6/1), or light gray (10YR 7/1, 7/2) mottled with yellowish brown. It ranges from silt loam to silty clay loam. The A horizon and upper part of the Btg horizon are medium acid to very strongly acid. The lower part of the Btg horizon is strongly acid to neutral.

The Calhoun parts of mapping units *Cn* and *Th* (Tenot-Calhoun complex) are outside the defined range for the series in that the calcium-magnesium ratio is less than 1 and also, the Calhoun part of unit Cn has fewer weatherable minerals. These differences, however, do not materially alter the usefulness or behavior of the soils.

Calhoun silt loam (Ch).—This level soil occurs as broad areas in the eastern part of the parish. It is wet for long periods because it has slow runoff and slow permeability and becomes waterlogged after a rain. This soil has the profile described as representative of the series. Generally, the content of nitrogen, phosphorus, and potassium is low. The surface layer is medium acid to strongly acid, and the subsoil is very strongly acid grading to mildly alkaline in the lower part. Available water capacity is high.

Included in mapping are small areas of Olivier, Patoutville, and Wrightsville soils.

About 70 percent of the acreage is wooded; some areas have been cleared for crops and pasture. The soil is saturated in winter and spring, but lacks adequate moisture for plants during the growing season in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—This soil is moderately well suited to most locally grown crops and pasture plants. Suitable crops are sweetpotatoes, rice, cotton, and soybeans. Suitable pasture plants are bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

This soil is fairly well suited to flood irrigation. It is fairly easy to keep in good tilth, but a crust is likely to form after a heavy rain. If the soil is under continuous cultivation, a plowpan is likely to form.

Land smoothing and water leveling increase the efficiency of flood irrigation. Where row crops are grown, proper row direction is needed to improve drainage. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes

in rotation with other crops. Subsoiling and chiseling help prevent the formation of a plowpan.

Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIw–3.

Wildlife.—Open areas are few and small on this soil and are poor habitat for quail, dove, rabbit, and other openland wildlife. This soil is well suited to woodland management for deer, squirrel, and rabbit. Small open areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. This soil is also well suited as habitat for duck, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees on this soil are oak, sweetgum, and loblolly pine. Trees suitable for planting are slash and loblolly pines. Potential productivity on this soil is very high. The site index for loblolly pine is 98. Seedling mortality is moderate. Because of wetness in winter and spring, restrictions on the use of equipment are severe.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, chalky bluestem, plumegrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums are left. Potential forage production per acre for woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Calhoun-Duralde complex (Cn).—These level and nearly level, poorly drained and somewhat poorly drained soils are in broad areas of the northeastern part of the parish. The Calhoun soil makes up about 60 percent of the acreage and the Duralde soil 30 percent.

The Calhoun soil is wet most of the time. It has slow runoff and becomes waterlogged after a rain. The surface layer is gray silt loam. The subsoil is gray silty clay loam mottled with yellowish brown. The surface layer is strongly acid, and the subsoil is very strongly acid. Generally, the content of nitrogen, phosphorus, calcium, and potassium is very low. Permeability is slow. Available water capacity is high.

The Duralde soil is on mounds and microridges. It also is wet for a significant period after a rain because it becomes waterlogged. This soil has the profile described as representative for the series. It is medium acid in the surface area and very strongly acid in the subsoil. Permeability and runoff are slow. Available water capacity is high.

Included in mapping are small areas of Evangeline and Frost soils that make up the rest of the acreage.

About 85 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soils are saturated in winter and early in spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are moderately well suited to most locally grown crops and pasture plants. Suitable crops are sweetpotatoes, soybeans, cotton, grain sorghum, and truck crops. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soils are easy to work and to keep in good tilth, but a crust is likely to form after a heavy rain. If the soils are under continuous cultivation, a plowpan is likely to form. The small mounds interfere with tillage. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Subsoiling and chiseling help prevent the formation of a plowpan. Where row crops are grown, land smoothing and proper row direction are needed to improve drainage. The response to fertilizer is good. Lime is needed. Capability unit IIIw–3.

Wildlife.—Open areas are few and small on these soils. The Duralde soil is suitable habitat for quail, dove, rabbit, and other openland wildlife. The Calhoun soil is poorly suited. The Calhoun soil is well suited to woodland management for deer, rabbit, and squirrel. The Duralde soil is suited. Small open areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. Both soils are well suited as habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, and sweetgum. Trees suitable for planting are loblolly and slash pines. Potential productivity is very high. The site index for loblolly pine is 98 on both soils. Seedling mortality is moderate on the Calhoun soil and slight on the Duralde soil. Because of wetness in winter and spring, restrictions on the use of equipment are severe on the Calhoun soil and moderate on the Duralde soil.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums are left. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Cascilla Series

The soils of the Cascilla series are well-drained, acid, and loamy throughout. They are at lower elevations on narrow flood plains in the northern part of the parish.

In a representative profile, the surface layer is dark-brown silt loam 4 inches thick. The next layer also is silt loam. It is brown in the upper 9 inches, dark brown in the next 27 inches, and pale brown below.

Cascilla soils are associated with Guyton, Frost, and Basile soils. They are better drained and browner than those soils.

Representative profile of Cascilla silt loam, frequently flooded, about 8 miles north of Ville Platte, 200 feet north of road in the Bayou Chicot Bottom, sec. 14, T. 3 S., R. 1 E.:

A1—0 to 4 inches, dark-brown (10YR 4/3) silt loam; very weak, fine, granular structure; very friable; many

fine and medium roots; few, very fine, hard, black concretions; strongly acid; clear, wavy boundary.

B1—4 to 13 inches, brown (10YR 5/3) silt loam; few, fine, faint, pale-brown mottles; weak, medium, subangular blocky structure; friable; common fine roots; common fine pores; few, fine, soft, black and brown concretions; very strongly acid; gradual, wavy boundary.

B2—13 to 40 inches, dark-brown (7.5YR 4/4) silt loam; common, medium, distinct, pale-brown (10YR 6/3) mottles; moderate, medium, subangular blocky structure; friable; few fine roots; common fine and medium pores; patchy black stains on ped faces; very strongly acid; gradual, wavy boundary.

B3—40 to 60 inches, pale-brown (10YR 6/3) silt loam; many, coarse, faint, light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; friable, slightly brittle; many fine and medium pores lined with patchy thin clay films and silt; few, fine, soft, brown concretions; very strongly acid.

The A horizon is dark grayish brown (10YR 4/2), dark brown, or brown (10YR 4/3) and ranges from 2 to 6 inches in thickness. The B horizon is brown (10YR 4/3, 5/3), yellowish brown (10YR 5/4, 5/6), light yellowish brown (10YR 6/4), or dark brown (7.5YR 4/4) mottled with pale brown and light brownish gray. The A horizon is medium acid to strongly acid and the B horizon is strongly acid to very strongly acid.

Cascilla silt loam, frequently flooded (Cs).—This well-drained, nearly level, acid soil is in narrow drainageways in the northern part of the parish. It has the profile described as representative of the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is strongly acid and the subsoil is very strongly acid. Permeability is moderate, and runoff is medium. Available water capacity is high.

Included in mapping are small areas of Guyton soils.

Most of the acreage is wooded. Flooding occurs mostly in winter and spring. The floodwater is 1 to 6 feet deep, but lasts only 1 to 4 days. The moisture available to plants is inadequate during dry periods in some years. The principal limitations are frequent flooding and low fertility.

Crops and pasture.—Flooding is too severe for cultivated crops in most years. Small areas have been cleared and are used for pasture. Common bermudagrass is a suitable pasture plant. Pasture plants respond well to fertilizer. Lime is needed. Capability unit Vw-2.

Wildlife.—This soil has only a few, small open areas. It is poorly suited as habitat for quail, dove, rabbit, and other openland wildlife because flooding makes it difficult to grow suitable food crops. This soil is well suited to woodland management for deer, squirrel, and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is suitable habitat for ducks and other wetland wildlife.

Woodland.—The principal trees are beech, oak, sweetgum, hickory, yellow-poplar, and loblolly pine. Trees suitable for planting are yellow-poplar, sycamore, cottonwood, and loblolly and slash pines. Potential productivity is very high. The site index for water oak and sweetgum is 102. Seedling mortality is slight. Restrictions on the use of equipment are slight. Wooded areas should not be grazed.

Crowley Series

The Crowley series consists of poorly drained to somewhat poorly drained, nearly level soils that have a clayey subsoil. These soils occur in broad, slightly convex areas at higher elevations in the southwestern half of the parish.

In a representative profile, the surface layer is dark grayish-brown silt loam 8 inches thick. The subsurface layer is grayish-brown silt loam 12 inches thick. The subsoil is grayish silty clay mottled with red and yellowish brown to a depth of more than 50 inches.

Crowley soils are associated with Mamou, Mowata, Midland, and Vidrine soils. They are more poorly drained and have more clay in the subsoil than Mamou soils. They have a coarser textured surface layer than Midland soils. They are better drained than Mowata soils and are more poorly drained than Vidrine soils.

The Crowley soils in Evangeline Parish are mapped only with Vidrine soils.

Representative profile of Crowley silt loam in an area of Crowley-Vidrine complex, 1.5 miles northwest of Mamou, 260 feet north of road intersection, 40 feet west of power line pole No. 35, NE¼SE¼ sec. 39, T. 4 S., R. 1 W.:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; few, fine, distinct, yellowish-red stains along root channel; few fine pores; common, fine, soft, black concretions; strongly acid; abrupt, smooth boundary.

A2g—8 to 20 inches, grayish-brown (10YR 5/2) silt loam; few, medium, distinct, dark yellowish-brown (10YR 4/4) mottles; massive; firm; few fine roots; common fine tubular pores; common, medium, soft, brown concretions; strongly acid; abrupt, wavy boundary.

B21tg—20 to 30 inches, dark-gray (10YR 4/1) and gray (10YR 5/1) silty clay; common, fine and medium, prominent, red (10R 4/8) mottles; compound, moderate, fine, angular blocky structure adhering as moderate, medium, prismatic; firm; few fine roots along ped faces; few fine pores lined with clay; continuous thick clay films on ped surfaces; common, fine, hard, black concretions; very strongly acid; gradual, wavy boundary.

B22tg—30 to 40 inches, gray (10YR 5/1) and grayish-brown (10YR 52) silty clay; many, fine and medium, prominent, red (2.5YR 4/8) mottles and distinct yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots along ped faces; few fine pores lined with clay; continuous thick clay films on ped surfaces; few, fine, hard, black concretions; medium acid; gradual, wavy boundary.

B3tg—40 to 80 inches, light brownish-gray (10YR 6/2) and light-gray (2.5Y 7/2) silty clay loam; many, medium, distinct, yellowish-brown (10YR 5/8) and brownish-yellow (10YR 6/6) mottles; very weak, coarse, subangular blocky structure or massive; firm; patchy thin clay films on ped surface; few, fine, soft, brown concretions; lime concretions at a depth of 62 inches; neutral; gradual, wavy boundary.

C2—80 to 100 inches, yellowish-red (5YR 4/8) and light-gray (2.5Y 7/2) silty clay loam; massive; firm; neutral.

The Ap horizon ranges from dark grayish brown (10YR 4/2) to gray (10YR 5/1) in color and from 6 to 10 inches in thickness. The A2 horizon is gray (10YR 5/1, 6/1), light gray (10YR 7/1, 7/2), grayish brown (10YR 5/2), or light brownish gray (10YR 6/2) and is 6 to 14 inches thick. The B horizon is dark gray (10YR 4/1), gray (10YR 5/1), grayish brown (10YR 5/2), or light brownish gray (10YR 6/2) prominently mottled with red and yellow. It ranges from silty clay

to silty clay loam. The A horizon is very strongly acid to medium acid. The B horizon is very strongly acid in the upper part and neutral to moderately alkaline in the lower part.

Crowley-Vidrine complex (Cv).—These nearly level, poorly drained to somewhat poorly drained soils are on broad, slightly convex areas in the southwestern part of the parish. The Crowley soil makes up about 65 percent of the acreage, and the Vidrine soil 30 percent.

The Crowley soil is wet for extended periods because runoff is slow and permeability is very slow in the clayey subsoil. The profile is the one described as representative of the series. Generally, the content of nitrogen and phosphorus is very low and that of potassium is low. This soil is strongly acid in the surface layer and grades to neutral in the lower subsoil. Available water capacity is moderate.

The Vidrine soil is on smooth mound areas and microridges. It is wet for significantly long periods because of the slowly permeable clayey subsoil. The surface layer is grayish-brown silt loam. The upper part of the subsoil is yellowish-brown silt loam, and the lower part is grayish-brown silty clay mottled with red. Generally, the content of nitrogen and phosphorus is very low and that of potassium is low. This soil is strongly acid in the surface layer and grades to neutral in the lower subsoil. Permeability and runoff are slow. Available water capacity is high.

Included in mapping are small areas of Mowata and Mamou soils.

Most of the acreage is in crops and pasture. The soils are saturated in winter and early in spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are well suited to most crops and pasture plants grown locally. Suitable crops are rice, soybeans, cotton, and sweetpotatoes. Rice is the principal crop. Suitable pasture plants are dallisgrass, bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soils are well suited to flood irrigation. They are fairly easy to work and to keep in good tilth, but if they are under continuous cultivation, a plowpan is likely to form. In places a crust forms after heavy rains. The small mounds interfere with tillage.

Tilth is improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice helps overcome the effects of crusting. Subsoiling and chiseling help to prevent the formation of a plowpan.

Land smoothing and water leveling increase the efficiency of flood irrigation and improve drainage. Where row crops are grown, proper row direction is needed to improve drainage. Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIw–4.

Wildlife.—Open areas are extensive, but these soils are poor habitat for quail, dove, rabbit, and other openland wildlife. The soils are not suited to woodland wildlife because there are few trees. They are well suited as habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 93. Seedling mortality is moderate on the Crowley soil and slight on the Vidrine soil. Because of wetness in winter and spring, restrictions on the use of equipment are severe on Crowley soil and moderate on Vidrine soil.

Properly managed wooded areas can support a good cover of understory vegetation that cattle can graze. Major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums are left. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Dossman Series

The Dossman series consists of well-drained soils that have a reddish subsoil. These are very gently sloping to steep soils on narrow ridgetops and on hillsides at higher elevations in the northern part of the parish.

In a representative profile, the surface layer is brown silt loam 5 inches thick. The subsoil is yellowish-brown silt loam in the upper 4 inches, dark-red to red silty clay loam in the next 23 inches, and reddish-brown silty clay loam below.

Dossman soils are associated with Evangeline and McKamie soils. They are better drained and have a redder subsoil than Evangeline soils. They have a coarser textured subsoil than McKamie soils.

Representative profile of Dossman silt loam, 1 to 5 percent slopes, eroded, about 6 miles north of Ville Platte, 0.2 mile southwest of road, 100 feet east of utility pole in pasture, N¼ sec. 40, T. 3 S., R. 1 E.:

Ap—0 to 5 inches, brown (7.5YR 4/4) silt loam; common, fine, prominent, red specks; weak, fine, granular structure; very friable; many fine roots; few, fine, soft, black concretions; medium acid; clear, wavy boundary.

B1—5 to 9 inches, yellowish-brown (10YR 5/6) silt loam; common, fine, prominent, red specks; weak, fine, subangular blocky structure; friable; common fine roots; many fine pores; common worm casts; few, fine, soft, brown concretions; medium acid; abrupt, wavy boundary.

B21t—9 to 16 inches, dark-red (2.5YR 3/6) silty clay loam; dark reddish-brown (2.5YR 3/4) ped surfaces; moderate, medium and fine, subangular blocky structure; firm; few fine roots; few fine pores; continuous thick clay films on ped surfaces; few, fine, soft, black concretions; very strongly acid; gradual, wavy boundary.

B22t—16 to 32 inches, red (2.5YR 4/6) silty clay loam; dark-red (2.5YR 3/6) ped surfaces; moderate, medium and fine, subangular blocky structure; firm; few fine roots; many fine pores; continuous thick clay films and common, patchy, black stains on ped surfaces; very strongly acid; gradual, wavy boundary.

B23t—32 to 42 inches, reddish-brown (5YR 4/4) silty clay loam; dark-red (2.5YR 3/6) ped surfaces; moderate, medium, subangular blocky structure; friable; common fine pores; continuous thick clay films and common, patchy, black stains on ped surfaces; very strongly acid; gradual, wavy boundary.

B3t—42 to 72 inches, reddish-brown (5YR 4/4) silt loam; weak, medium, subangular blocky structure; friable; patchy thin clay films on ped surfaces; silt coats

less than 1 millimeter thick on vertical ped surfaces; few, very fine, soft, black concretions; very strongly acid; gradual, wavy boundary.

C—72 to 106 inches, dark-brown (7.5YR 4/4) silt loam; very weak, coarse, prismatic structure; very friable; few, patchy, thin silt coats along vertical cracks; few, very fine, hard, brown concretions; strongly acid.

The A horizon is brown (10YR 4/3, 5/3; 7/5YR 4/2, 5/2, 4/4, 5/4) or yellowish brown (10YR 5/4, 5/6) and is 3 to 6 inches thick. The Ap horizon ranges from silt loam to silty clay loam. The Bt horizon is reddish brown (5YR 4/4), dark reddish brown (2.5YR 3/4), dark red (2.5YR 3/6), red (2.5YR 4/6) or yellowish red (5YR 5/6, 4/6, 5/8, 4/8). The A horizon is medium acid to strongly acid, and the Bt horizon is strongly acid to very strongly acid.

Dossman silt loam, 1 to 5 percent slopes, eroded (DoC2).—This is a well-drained, very gently sloping to gently sloping, loamy soil on the narrow tops and the sides of ridges in the northern part of the parish. This soil has the profile described as representative of the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is medium acid, and the subsoil is strongly acid. Permeability is moderately slow, and runoff is medium to rapid. Available water capacity is high.

Included in mapping are small areas of Evangeline soil.

About 70 percent of the acreage is wooded. A small acreage is used for crops and pasture. Little moisture is available to plants during long dry periods late in summer and in fall of some years. The principal limitations are low fertility and the erosion hazard.

Crops and pasture.—The soil is well suited to most crops and pasture plants grown locally. Suitable crops are sweetpotatoes, cotton, soybeans, corn, and truck crops. Suitable pasture plants are vetch, millet, ryegrass, bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover. The soil is easy to work and to keep in good tilth, but if it is cultivated to the same depth every year, a plowpan is likely to form. Terracing or contour cultivation is needed to help control runoff and reduce the erosion hazard. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed, especially on soils in pasture areas. Capability unit IIe–1.

Wildlife.—Open areas are few and small on this soil, but they attract quail, dove, rabbit, and other openland wildlife. This soil is suited to woodland management for deer, squirrel, and rabbit. Small open areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and provide supplemental food for deer. The soil is not suited to wetland wildlife.

Woodland.—The principal trees are loblolly pine, hickory, and oak. Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is high. The site index for loblolly pine is 92. Seedling mortality is slight. Restrictions on the use of equipment are slight.

Properly managed wooded areas can support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Dossman soils, 8 to 30 percent slopes (DsE).—These are sloping to steep, well-drained silt loams along the upper valley walls in the northeastern part of the parish. The surface layer in most places is brownish silt loam, but in many places erosion has exposed the reddish silty clay loam subsoil. Generally, the content of nitrogen, phosphorus, potassium, and calcuim is very low. The surface layer is medium acid, and the subsoil is very strongly acid. Permeability is moderately slow, and runoff is rapid. Available water capacity is high.

Included in mapping are small areas of McKamie soils, some small areas of soils that are not so red as Dossman soils and that have colluvial material at the lower end of the slopes, and areas of soils that have a brown silt loam surface layer and a brown or yellowish-brown silt loam subsoil.

About 90 percent of the acreage is wooded. A small acreage is used for pasture and nature trails. Little moisture is available to pasture plants during dry periods in summer and fall. The principal limitations are steep slopes, the erosion hazard, and low fertility.

Crops and pasture.—These soils are generally unsuited to cultivated crops because of the erosion hazard and the steep, irregular slopes. Pasture is fairly well suited on the upper slopes, but is difficult to manage on the steeper slopes. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, white clover, ryegrass, and vetch.

Response to fertilizer is good. Lime is needed. Capability unit VIe–1.

Wildlife.—This soil is poorly suited as habitat for quail, dove, rabbit, and other openland wildlife, but it is suited to woodland management for deer, squirrel, and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suited to wetland wildlife.

Woodland.—The principal trees are loblolly pine, hickory, oak, and beech. Trees suitable for commercial planting are slash and loblolly pines, oak, and yellow-poplar. Potential productivity is high. The site index for loblolly pine is 92. Seedling mortality is slight. Because of steep, irregular slopes, restrictions on the use of equipment are moderate to severe.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums are left. Potential forage production per acre on woodland is excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Duralde Series

The Duralde series consists of somewhat poorly drained soils that are loamy throughout the profile. These soils are mainly gently sloping, but they also occur

as very small mounds. They are in the northern part of the parish.

In a representative profile, the surface layer is dark grayish-brown silt loam 4 inches thick. The subsoil is yellowish-brown silt loam to a depth of 21 inches, dark-brown silty clay loam to a depth of 36 inches, and yellowish-brown silty clay loam below.

Duralde soils are associated with Calhoun, Evangeline, and Frost soils. They are better drained than Calhoun and Frost soils and have a browner subsoil. They are more poorly drained than Evangeline soils.

Representative profile of a Duralde silt loam in an area of Calhoun-Duralde complex, about 10 miles north of Ville Platte, 300 feet east of gravel road in sec. 1, T. 3 S., R. 2 E.:

A1—0 to 4 inches, dark grayish-brown (10YR 4/2) silt loam; few, fine, faint, gray mottles; weak, fine, granular structure; very friable; many fine roots; many, medium, soft, brown concretions; medium acid; clear, wavy boundary.

B1—4 to 21 inches, yellowish-brown (10YR 5/4) silt loam; common, medium, faint, pale-brown (10YR 6/3) mottles; moderate, medium, subangular blocky structure; friable; few fine roots; few fine pores lined with white silt; many, medium, soft, black and brown concretions; very strongly acid; clear, irregular boundary.

Bt&A'2—21 to 25 inches, dark-brown (10YR 4/3) silty clay loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles and few, fine, faint, grayish-brown mottles; moderate, medium, subangular blocky structure; firm; few fine roots along ped surfaces; many fine pores; patchy thin clay films on horizontal ped surfaces; 20 percent is pale-brown (10YR 6/3) silt coats and discontinuous silt pockets; many, medium, soft, brown concretions; very strongly acid; clear, wavy boundary.

B21t—25 to 36 inches, dark-brown (10YR 4/3) silty clay loam; common, medium, faint, grayish-brown (10YR 5/2) mottles; moderate, medium, subangular blocky structure; firm; many fine pores; continuous thin clay films on ped surfaces; thin silt coats on vertical ped surfaces; common, medium, soft, brown concretions; very strongly acid; gradual, wavy boundary.

B22t—36 to 60 inches, yellowish-brown (10YR 5/4) silty clay loam; common, medium, faint, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots along ped surfaces; common fine pores lined with clay; continuous thick clay films on ped surfaces; common, fine, soft, brown concretions; very strongly acid; gradual, wavy boundary.

B23t—60 to 92 inches, yellowish-brown (10YR 5/4) silty clay loam; common, medium, faint, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine pores lined with clay; continuous thin clay films on ped surfaces, silt coats on vertical ped surfaces; common, medium, soft, brown concretions; neutral.

The A horizon is dark grayish brown (10YR 4/2), brown (10YR 4/3, 5/3), yellowish brown (10YR 5/4), pale brown (10YR6/3), or light yellowish brown (10YR 6/4). It ranges from 2 to 5 inches in thickness. The B1 horizon is brown (10YR 5/3), yellowish brown (10YR 5/4, 5/6), pale brown (10YR 6/3), or light yellowish brown (10YR 6/4). It ranges from 15 to 20 inches in thickness. The Bt horizon is as much as 50 percent pale-brown (10YR 6/3) or light-gray (10YR 7/2) discontinuous A2 horizon of silt loam that occurs as tongues around Bt horizon peds. The Bt horizon is dark brown (10YR 4/3), brown (10YR 5/3), or yellowish brown (10YR 5/4, 5/6) and has few to many grayish mottles. It ranges from silt loam to silty clay loam. The A horizon is medium acid to very strongly acid. The B1 horizon is strongly acid to very strongly acid and grades to neutral in the lower part of the Bt horizon.

Duralde silt loam, 1 to 3 percent slopes (DuB).—This soil is adjacent to drainageways in the northern part of the parish. It is wet for extended periods because permeability is slow in the lower part of the subsoil. The surface layer is dark grayish-brown silt loam. The subsurface layer is yellowish-brown silt loam, and the subsoil is dark-brown silty clay loam mottled with grayish brown and yellowish brown. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The soil is medium acid to very strongly acid in the surface layer and upper part of the subsoil and grades to neutral in the lower part. Runoff is medium. Available water capacity is high.

Included in mapping are small areas of Calhoun, Evangeline, and Frost soils.

About 90 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soil is saturated in winter and spring, but lacks adequate moisture for plants during dry periods in some years. The principal limitations for crops are low fertility, wetness, and the erosion hazard.

Crops and pasture.—This soil is moderately well suited to most locally grown crops and pasture plants. Suitable crops are sweetpotatoes, cotton, soybeans, and grain sorghum. Suitable pasture plants are bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soil is fairly easy to keep in good tilth, but a crust is likely to form after a heavy rain. If the soil is under continuous cultivation, a plowpan is likely to form.

Where row crops are grown, land smoothing and proper row direction are needed to control erosion and conserve moisture. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Subsoiling and chiseling help to prevent the formation of a plowpan.

Response to fertilizer is good. Lime is needed. Capability unit IIw–1.

Wildlife.—The few, small open areas are suitable habitat for quail, dove, and rabbit. Grainfields and pasture areas attract these species. This soil is suited to woodland management for rabbit, deer, and squirrel. Small areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is suitable habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, sweetgum, and hickory. Trees suitable for planting are loblolly and slash pines. Potential productivity is very high. The site index for loblolly pine is 98. Seedling mortality is slight. Restrictions on the use of equipment are moderate because the soil is wet in winter and spring.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums are left. Potential forage pro-

duction per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Evangeline Series

The Evangeline series consists of moderately well drained, loamy soils. These soils are on the broad tops and the sides of ridges at higher elevations in the northern part of the parish.

In a representative profile, the surface layer is very dark grayish-brown silt loam 3 inches thick, and the subsurface layer is dark yellowish-brown silt loam 4 inches thick. The subsoil is strong-brown and yellowish-red silt loam in the upper 16 inches and reddish-brown and brown silty clay loam below.

Evangeline soils are associated with Calhoun and Duralde soils, which occupy higher elevations, and Dossman soils, which are at lower elevations. Evangeline soils are better drained than Calhoun and Duralde soils, but not so well drained as Dossman soils.

Representative profile of Evangeline silt loam, 1 to 3 percent slopes, eroded, about 9 miles north of Ville Platte, 0.7 mile south of Bayou Chicot Village, 1.8 miles east of U.S. Highway No. 167, and 750 feet north of cattle gap bridge along trail, sec. 13, T. 3 S., R. 1 E.:

Ap—0 to 3 inches, very dark grayish-brown (10YR 3/2) silt loam; weak, fine, granular structure; friable; many fine roots; few fine pores; many worm casts; slightly acid; abrupt, wavy boundary.

A2—3 to 7 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine, subangular blocky structure; friable; common fine roots; few fine pores; few, very fine, soft, black concretions; slightly acid; gradual, wavy boundary.

B1—7 to 12 inches, strong-brown (7.5YR 5/8) silt loam; weak, medium, subangular blocky structure; friable; few fine roots; few fine pores; patchy thin clay films in pores; few, very fine, soft, dark-brown concretions; slightly acid; gradual, wavy boundary.

B21t—12 to 23 inches, yellowish-red (5YR 4/8) silt loam; moderate, medium, subangular blocky structure; friable; few fine roots; common fine pores lined with clay and patchy thin clay films on ped surfaces; few, fine, soft, red concretions; few, medium, soft, brown concretions in the lower part of horizon; strongly acid; abrupt, irregular boundary.

B22t&A'2—23 to 30 inches, reddish-brown (5YR 4/4) silty clay loam; 10 percent of the mass is pale-brown (10YR 6/3) silt coatings and discontinuous silt pockets; common, fine, faint, yellowish-red mottles; moderate, fine, subangular blocky structure; friable; few fine roots; patchy thin clay films and black stains on ped surface and in pores; small clusters of medium, hard, black concretions; very strongly acid; gradual, wavy boundary.

B'23t—30 to 41 inches, brown (10YR 5/3) silty clay loam; many, medium, prominent, red (2.5YR 4/6) mottles; moderate, medium, subangular blocky structure; firm; few fine roots along ped faces; common fine round voids lined with clay, continuous thick clay films on ped surfaces; very strongly acid; gradual, wavy boundary.

B'24t—41 to 63 inches, reddish-brown (5YR 4/4) silty clay loam; dark yellowish-brown (10YR 4/4) ped surfaces; few, fine, faint, grayish-brown mottles; compound, moderate, coarse, prismatic structure parting to moderate, coarse, subangular blocky; very firm; few fine roots along ped surfaces; few fine pores; continuous thick clay films on ped surfaces; thin silt coats on vertical ped surfaces; very strongly acid; gradual, wavy boundary.

B'3t—63 to 80 inches, brown (7.5YR 4/4) silty clay loam; moderate, medium, subangular blocky structure; friable; few fine pores lined with clay; continuous thick clay films and patchy black stains on ped surfaces; thin silt coats on vertical ped surfaces; medium acid.

The Ap or A1 horizon ranges from very dark grayish brown (10YR 3/2) to brown (10YR 5/3) in color and from 2 to 5 inches in thickness. The A2 horizon, where present, ranges from dark grayish brown (10YR 4/2) to light yellowish brown (10YR 6/4) in color and from 3 to 8 inches in thickness. The upper part of the Bt horizon is yellowish red (5YR 4/4, 4/8, 5/6, 5/8) or strong brown (7.5YR 5/6, 5/8). It is silt loam or silty clay loam and ranges from 15 to 80 inches in thickness. A discontinuous A'2 horizon of pale-brown (10YR 6/3) silt loam interfingers in the upper part of the Bt horizon. The lower part is brown (10YR 5/3), (7.5YR 4/4, 5/4), yellowish brown (10YR 5/4), dark yellowish brown (10YR 4/4), reddish brown (5YR 4/4, 5/4), or yellowish red (5YR 4/6, 4/8). The A horizon is slightly acid to very strongly acid, and the B horizon is medium acid to very strongly acid.

Evangeline silt loam, 1 to 3 percent slopes, eroded (EvB2).—This very gently sloping soil is on the broad tops and the sides of ridges in the northern part of the parish. It has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is slightly acid, and the subsoil is strongly acid. Permeability is moderately slow, and runoff is medium. Available water capacity is high.

Included in mapping are small areas of Calhoun, Duralde, Dossman, and Frost soils.

About 70 percent of the acreage is wooded. A small acreage is used for crops and pasture. The soil is wet for short periods in winter and spring, but lacks adequate moisture for plants during dry periods late in summer and in fall in some years. The principal limitations are low fertility and the erosion hazard.

Crops and pasture.—This soil is well suited to most crops and pasture plants grown locally. Suitable crops are sweetpotatoes, cotton, soybeans, corn, and truck crops. Suitable pasture plants are vetch, millet, ryegrass, common bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover. The soil is easy to work and to keep in good tilth, but if it is cultivated to the same depth every year, a plowpan is likely to form.

If the soil is clean tilled, terracing or contour cultivation is needed to control runoff and reduce the hazard of erosion. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed, especially in pasture areas. Capability unit IIe–1.

Wildlife.—The few, small open areas on this soil are suitable habitat for quail, dove, and rabbit. Grainfields and pasture areas attract these species. This soil is also suitable habitat for deer and squirrel. Small areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly pine, hickory, and oak. Trees suitable for planting are loblolly, longleaf, and slash pines. Potential productivity is very high. The site index for loblolly pine is 97.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums are left. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Evangeline silt loam, 3 to 5 percent slopes, eroded (EvC2).—This soil is long, narrow areas in the northern part of the parish. It is wet for a short period after a rain. The surface layer is very dark grayish-brown silt loam. The upper part of the subsoil is yellowish-red heavy silt loam, and the lower part is brown silty clay loam mottled with red. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is slightly acid, and the subsoil is strongly acid. Permeability is moderately slow, and runoff is medium to rapid. Available water capacity is high.

Included in mapping are small areas of Duralde and Dossman soils.

About 80 percent of the acreage is wooded. A small acreage has been cleared for crops and pasture. The soil is wet for short periods in winter and early in spring, but in some years it lacks adequate moisture for plants during dry periods late in summer and in fall. The principal limitations are the erosion hazard and low fertility.

Crops and pasture.—The soil is well suited to most crops and pasture plants locally grown. Suited crops are sweetpotatoes, cotton, soybeans, corn, and truck crops. Suited pasture plants are vetch, millet, ryegrass, common bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover. The soil is easy to work and to keep in good tilth, but if it is cultivated to the same depth every year, a plowpan can form.

If the soil is clean tilled, terracing or contour cultivation is needed to control runoff, reduce erosion, and conserve moisture. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed. Capability unit IIIe–2.

Wildlife.—Only a few, small open areas on this soil are suitable habitat for quail, dove, and other openland wildlife. Grainfields and pasture areas attract these species. The soil is suited to woodland management for rabbit, deer, and squirrel. Small areas planted to winter pasture plants provide a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly pine, hickory, and oak. Trees suitable for commercial planting are loblolly, longleaf, and slash pines. Potential productivity is very high. The site index for loblolly pine is 97.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Frost Series

The Frost series consists of poorly drained, acid soils on broad drainageways and in low areas in the northern and northeastern parts of the parish.

In a representative profile, the surface layer is dark grayish-brown silt loam 5 inches thick, and the subsurface layer is gray silt loam 12 inches thick. The subsoil is dark-gray silty clay loam mottled with yellowish brown to a depth of 34 inches and gray silty clay loam below.

Frost soils are associated with Calhoun and Cascilla soils. They have a darker colored subsoil than Calhoun soils. They are more poorly drained than Cascilla soils and have a more strongly developed profile.

Representative profile of Frost silt loam, occasionally flooded, about 12 miles northeast of Ville Platte, 300 feet southwest of road, 60 feet north of creek in SW¼ sec. 42, T. 2 S., R. 1 E.:

A1—0 to 5 inches, dark grayish-brown (10YR4/2) silt loam; common, fine, brown and gray mottles; weak, fine, granular structure; friable; many fine roots; few fine pores; common, fine, hard, black concretions; few, patchy, black strains; very strongly acid; clear, wavy boundary.

A2g—5 to 17 inches, gray (10YR6/1) silt loam; very weak, medium, granular structure to massive; very friable; few fine roots; many fine tubular pores lined with white silt; common, medium, hard, brown concretions with black interiors; light-gray (10YR7/1) silt tongues extending to a depth of 34 inches; very strongly acid; abrupt, irregular boundary.

B2tg—17 to 34 inches, dark-gray (10YR4/1) silty clay loam; few, medium, distinct, yellowish-brown (10YR 5/8) mottles and many, fine, distinct, light-gray (10YR 7/1) specks inside peds; moderate, medium, subangular blocky structure; firm; common fine roots along ped faces; common fine pores lined with clay; continuous thick clay films on ped surfaces; common, thick, very dark gray (10YR 3/1) clay cups and clay flows; common, thin, light-gray (10YR 7/1), vertical silt streaks; common, medium, hard, yellowish-brown concretions; very strongly acid; gradual, wavy boundary.

B3tg—34 to 51 inches, gray (10YR 5/1) silty clay loam; common, medium, distinct, brown (10YR 5/3) mottles and few, fine, faint, light-gray mottles; weak, medium, subangular blocky structure; firm; common fine pores lined with clay; patchy thin clay films and black stains on ped surfaces; common, fine, hard, brown concretions; strongly acid.

The A horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), dark gray (10YR 4/1), or gray (10YR 5/1). A brown (10 YR 4/3, 5/3) silt loam overwash 1 to 12 inches thick is common. The A2g horizon is gray (10YR 5/1, 6/1) or light gray (10YR 7/1, 7/2) and tongues into the Btg horizon. The Btg horizon is very dark gray (10YR 3/1), dark gray (10YR 4/1), or gray (10YR 5/1). Ped interiors are gray and light gray in a salt-and-pepper pattern. The A horizon ranges from medium acid to very strongly acid. The B horizon is strongly acid to extremely acid.

Frost silt loam, occasionally flooded (Fr).—This soil is in broad drainageways at low elevations and in small circular depressions at the higher elevations. It is wet much of the time. It becomes waterlogged after a rain because runoff and permeability are slow. Runoff from higher areas after a rain occasionally floods this soil during the winter and spring. This soil has the profile described as

representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is low or very low. The surface layer and subsoil are very strongly acid, and lower layers are strongly acid. Available water capacity is high.

Included in mapping are small areas of Calhoun soils and of soils similar to the Cascilla soils.

Almost all the acreage is wooded. Even though this soil is occasionally excessively wet in winter and spring, moisture is inadequate for plants during dry periods late in summer and in fall in many years. The principal limitations are low fertility, occasional flooding, and wetness.

Crops and pasture.—Flooding is too severe for most crops in some years. Soybeans and grain sorghum can be grown if they are planted late and flooding can be controlled. Common bermudagrass is a suitable pasture plant. Response to fertilizer is good. Lime is needed. Capability unit IVw–1.

Wildlife.—There are very few open areas. This soil is not suitable habitat for openland wildlife, but it is well suited to woodland management for deer, rabbit, and squirrel. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is also well suited habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are water oak, pin oak, willow oak, sweetgum, and loblolly pine. Trees suitable for planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 90. Seedling mortality is moderate. Restrictions on the use of equipment are severe because of occasional flooding and wetness.

Properly managed, wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, chalky bluestem, plumegrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Gallion Series

The Gallion series consists of well-drained soils that are loamy throughout the profile. They occur on high natural levees along Bayou Cocodrie.

In a representative profile, the surface layer is dark-brown silt loam in the upper 6 inches and reddish-brown silt loam in the lower 7 inches. The subsoil is red silty clay loam to a depth of 24 inches and reddish-brown very fine sandy loam to a depth of 50 inches.

Gallion soils are associated with Latanier, Moreland, and Perry soils. They are better drained and coarser textured than those clayey soils.

Representative profile of Gallion silt loam, about 14 miles north of Ville Platte, one-fourth mile east of road in NW¼ sec. 6, T. 2 S., R. 2 E.:

Ap—0 to 6 inches, dark-brown (7.5YR 4/2) silt loam; weak, fine, granular structure; friable; many roots; slightly acid; abrupt, wavy boundary.

A3—6 to 13 inches, reddish-brown (5YR 4/3) silt loam; weak, medium, subangular blocky structure; firm; few fine roots; few fine pores lined with clay; few silt coats on vertical ped faces; slightly acid; gradual, wavy boundary.

B2t—13 to 24 inches, red (2.5YR 4/6) silty clay loam; weak, medium, subangular blocky structure; firm; few fine pores; patchy thin clay films on ped surfaces; few, fine, hard, black concretions; mildly alkaline; gradual, wavy boundary.

B3—24 to 50 inches, reddish-brown (2.5YR 4/4) very fine sandy loam; very weak, coarse, subangular blocky structure; friable; many fine pores; moderately alkaline.

The A horizon is reddish brown (5YR 4/3, 4/4), dark brown (7.5YR 4/2, 4/4), brown (7.5YR 5/2, 5/4; 10YR 4/3, 5/3), dark grayish brown (10YR 4/2), or grayish brown (10YR 5/2). It is silt loam or silty clay loam. The Bt horizon is red (2.5YR 4/6), reddish brown (2.5YR 4/4; 5YR 5/4, 4/4), or yellowish red (5YR 5/6, 4/6). It ranges from silt loam to silty clay loam. The B3 horizon in places is stratified with silt, sand, and clay. The A horizon is medium acid to neutral. The B horizon is neutral to moderately alkaline.

Gallion silt loam (Ga).—This nearly level, well-drained, loamy soil is on broad, higher areas along the natural levees of Bayou Cocodrie. It has the profile described as representative for the series. The surface layer is slightly acid, and the subsoil is mildly alkaline to moderately alkaline. Permeability is moderately slow, and runoff is medium. Available water capacity is high.

Included in mapping are small areas of Gallion silty clay loam and of Latanier soils.

Almost all the acreage is used for crops and pasture. Inadequate available moisture during dry periods late in summer and in fall of some years is a limitation. Excess surface water is a limitation for crops in some areas.

Crops and pasture.—This soil is well suited to most crops and pasture plants grown locally. Suitable crops are cotton, corn, sweetpotatoes, and soybeans. Suitable pasture plants are common bermudagrass, dallisgrass, Pensacola bahiagrass, ryegrass, vetch, and white clover.

This soil is easy to keep in good tilth, but a crust is likely to form after a rain. If the soil is under continuous cultivation, a plowpan is likely to form.

Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Subsoiling and chiseling help to prevent the formation of a plowpan. Land grading for drainage and land smoothing for irrigation improve surface drainage and increase the effectiveness of farm equipment. Response to fertilizer is good. Capability unit I–1.

Wildlife.—This soil is well suited habitat for quail, dove, and other openland wildlife. Grainfields and pasture areas attract these species. The soil is well suited to woodland management for rabbit, deer, and squirrel. Planting winter pasture plants in fields that border wooded areas provides a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—Trees suitable for commercial planting are cherrybark oak, water oak, sweetgum, sycamore, and cottonwood. Potential productivity is very high. The site index for cherrybark oak is 96. Seedling mortality is

slight, and restrictions on the use of equipment are slight. Wooded areas should not be grazed.

Gallion silty clay loam (Gc).—This nearly level soil is in narrow areas at intermediate elevations along Bayou Cocodrie. It is wet for a short but significant time after a rain because runoff is slow and permeability is moderately slow. The surface layer is brown or dark-brown silty clay loam, and the subsoil is yellowish-red or reddish-brown very fine sandy loam. The surface layer is slightly acid, and the subsoil is moderately alkaline. Available water capacity is high.

Included in mapping are small areas of Gallion silt loam and areas of Latanier and Moreland soils.

About 65 percent of the acreage is used for crops and pasture and 35 percent for woodland. The principal limitation for crops is the excess surface water.

Crops and pasture.—This soil is moderately well suited to most crops and pasture plants grown locally. Moderately well suited crops are cotton, corn, and soybeans. Rice is well suited. Suitable pasture plants are common bermudagrass, dallisgrass, Pensacola bahiagrass, ryegrass, vetch, and white clover.

The soil is fairly easy to keep in good tilth, but if it is cultivated when too wet, clods form and after a rain a crust is likely to form. Land grading for drainage and land smoothing and water leveling for irrigation improve the surface drainage and increase the effectiveness of farm equipment. If row crops are grown, proper row direction improves drainage. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Response to fertilizer is good. Capability unit IIw–3.

Wildlife.—This soil is suitable habitat for quail, dove, and other openland wildlife. Grainfields and pasture areas attract these species. The soil is well suited to woodland management for squirrel, deer, and rabbit. Planting winter pasture plants on the edges of fields that border wooded areas provides a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is also well suited as habitat for ducks, geese, snipe, crawfish, and other wetland wildlife.

Woodland.—The principal trees are cherrybark oak, green ash, water oak, and sweetgum. Trees suitable for commercial planting are oak, sycamore, and cottonwood. Potential productivity is moderately high. The site index for green ash is 80, water oak is 90, and sweetgum is 93. Seedling mortality is slight, and restrictions on the use of equipment are slight. Wooded areas should not be grazed.

Glenmora Series

The Glenmora series consists of very gently sloping, moderately well drained, and slowly permeable soils on broad, convex areas in the northwestern part of the parish.

In a representative profile, the surface layer is dark grayish-brown silt loam 6 inches thick. The subsurface layer is pale-brown silt loam 4 inches thick. The subsoil is yellowish-brown and pale-brown silty clay loam mottled with light brownish gray and yellowish red to a depth of 25 inches. Below this is gray silty clay loam.

Glenmora soils are associated with Caddo, Messer, Savannah, and Ruston soils. They are better drained than the Caddo soils. They are more poorly drained than the Ruston and Messer soils. In contrast with Savannah soils, they do not have a fragipan.

Representative profile of Glenmora silt loam, 1 to 3 percent slopes, about 5 miles west of Pine Prairie, 45 feet north of roadbank, SW¼ sec. 17, T. 3 S., R. 1 W.:

A1—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; common fine roots; few fine pores; common, fine, soft, black concretions; very strongly acid; clear, irregular boundary.

A2—6 to 10 inches, pale-brown (10YR 6/3) silt loam; weak, coarse, subangular blocky structure; friable; common fine roots; common, fine, soft, brown concretions; very strongly acid; clear, broken boundary.

B1—10 to 14 inches, yellowish-brown (10YR 5/6) silt loam; common, medium, distinct, light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; friable; few fine roots; common, medium voids lined with white silt; common, fine, soft, brown concretions; very strongly acid; gradual, wavy boundary.

B21t—14 to 25 inches, mottled yellowish-brown (10YR 5/4) and pale-brown (10YR 6/3) silty clay loam; few, medium, prominent, yellowish-red (5YR 4/8) mottles; moderate, medium, subangular blocky structure that parts to moderate, fine, subangular blocky; firm; a few yellowish-brown peds are brittle; few fine roots; few fine pores; distinct discontinuous clay films on ped surfaces; uncoated silt grains as much as 5 millimeters in thickness surround most peds; common, medium, hard, brown concretions; very strongly acid; abrupt, irregular boundary.

B22t&A'2—25 to 32 inches, light brownish-gray (10YR 6/2) silty clay loam; many, medium, prominent, red (10R 4/8) mottles; moderate, coarse, subangular blocky structure that parts to moderate, fine, subangular blocky; firm; a few, brittle, red masses; few fine roots along ped surfaces; few fine pores lined with clay; distinct discontinous clay films on ped surfaces; light brownish-gray silt coatings around primary peds make up 10 percent of the horizon; common, fine, hard, brown concretions; very strongly acid; gradual, wavy boundary.

B23t—32 to 50 inches, gray (10YR 6/1) silty clay loam; many, distinct, yellowish-brown (10YR 5/6) and prominent yellowish-red (5YR 4/8) mottles; moderate, coarse, subangular blocky structure that parts to moderate, fine, subangular blocky; firm; distinct brittleness in brown and red areas in 25 percent of the mass; few fine roots along ped surfaces; few fine voids inside peds; about 3 percent plinthite; very strongly acid; gradual, wavy boundary.

B3—50 to 80 inches, mottled yellowish-brown (10YR 5/8) and yellowish-red (5YR 4/8) silty clay loam; many, medium, distinct, gray (10YR 6/1) mottles; moderate, coarse, subangular blocky structure; firm; continuous thick clay films on ped surfaces; silt coats on vertical ped surfaces; medium acid.

The A1 horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3), and it is 3 to 7 inches thick. The A2 horizon is pale brown (10YR 6/3), very pale brown (10YR 7/3), or light yellowish brown (10YR 6/4). The B1 and B21t horizons are brown (10YR 5/3), yellowish brown (10YR 5/4, 5/6), pale brown (10YR 6/3), light yellowish brown (10YR 6/4), or strong brown (7.5YR 5/6) mottled with gray, grayish brown, or red. They are silt loam or silty clay loam. The lower part of the Bt horizon is silty clay loam that is mottled gray (10YR 5/1, 6/1), light brownish gray (10YR 6/2), yellowish brown (10YR 5/6, 5/8), strong brown (7.5YR 5/6, 5/8), or yellowish red (5YR 4/6, 4/8, 5/6, 5/8). Primary peds are coated with silt. The soil is very strongly acid throughout the A and Bt horizons. The B3 horizon ranges from very strongly acid to neutral.

Glenmora silt loam, 1 to 3 percent slopes (GeB).—This soil is in broad areas in the northwestern part of the parish. It is wet for a short but significant time after a rain because permeability is slow in the lower part of the subsoil. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer and subsoil are very strongly acid. Runoff is medium, and the available water capacity is high.

Included in mapping are small areas of Caddo, Messer, Ruston, and Savannah soils.

About 80 percent of the acreage is wooded. Some areas have been cleared for crops and pasture. The subsoil is saturated in winter and early in spring, but lacks adequate moisture for plants during dry periods late in summer and in fall of some years. The principal limitations are low fertility and the erosion hazard.

Crops and pasture.—This soil is moderately well suited to most crops and pasture plants grown locally. Suitable crops are rice, soybeans, grain sorghum, and cotton. Soybeans and rice are the principal crops. Suitable pasture plants are Pensacola bahiagrass, bermudagrass, dallisgrass, and white clover.

The soil is suited to flood irrigation. It is fairly easy to keep in good tilth, but a crust is likely to form after a heavy rain. If the soil is under continuous cultivation, a plowpan is likely to form.

Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice can overcome the effect of crusting. Subsoiling and chiseling help prevent formation of a plowpan.

Land smoothing and water leveling increase the effectiveness of flood irrigation. Where row crops are grown, proper row direction is needed to control erosion and preserve moisture. Response to fertilizer is good. Lime is needed. Capability unit IIe–2.

Wildlife.—This soil is suitable habitat for quail, dove, rabbit, and other openland wildlife. Grainfields and pasture areas attract these species. The soil is suited to woodland management for deer, rabbit, and squirrel. Planting winter pasture plants on the edges of fields that border wooded areas provides a good supply of food for deer. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is also suitable habitat for ducks, geese, snipe, and crawfish and other wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, and sweetgum. Suitable trees for planting are loblolly, longleaf, and slash pines. Potential productivity is fairly high. The site index for loblolly pine is 93. Seedling mortality is slight. Restrictions on the use of equipment are moderate because the soil is wet in winter and spring.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Guyton Series

The Guyton series consists of poorly drained, acid soils in broad depressions and in drainageways throughout the parish.

In a representative profile, the surface and subsurface layers are light brownish-gray and light-gray silt loam that extends to a depth of 30 inches. The subsoil is light brownish-gray silty clay loam mottled with yellowish brown to a depth of 40 inches. Below this is light-gray and gray silty clay loam.

Guyton soils are associated with Caddo, Messer, Glenmora, and Cascilla soils. They are more poorly drained and grayer than Messer, Glenmora, and Cascilla soils. They do not have red mottles, which are typical of Caddo soils.

Representative profile of Guyton silt loam, occasionally flooded, about 9 miles west of Turkey Creek, 150 feet south of road intersection, 90 feet east of road, sec. 27, T. 2 S., R. 2 W.:

A1—0 to 2 inches, light brownish-gray (10YR 6/2) silt loam; weak, fine, granular structure; firm, brittle; very strongly acid; abrupt, smooth boundary.

A21g—2 to 16 inches, light-gray (10YR 7/2) silt loam; common, fine, prominent, dark yellowish-brown mottles; massive; firm, brittle; common, fine and medium, black concretions; very strongly acid; gradual, wavy boundary.

A22g—16 to 30 inches, light brownish-gray (2.5Y 6/2) silt loam; common, medium and coarse, yellowish-brown (10YR 5/6) mottles; massive; firm, brittle; common, fine and medium, black concretions; extremely acid; abrupt, irregular boundary; tongues extend to a depth of 36 inches.

B21tg—30 to 40 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common, medium and coarse, prominent, yellowish-brown (10YR 5/6) mottles; weak, medium, prismatic structure; firm; continuous thick clay films on ped surfaces; few, fine and medium, hard, black concretions; extremely acid; abrupt, wavy boundary.

B22tg—40 to 70 inches, light-gray (10YR 7/1) and gray (10YR 6/1) silty clay loam; common, coarse, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, prismatic structure; firm; continuous thick clay films on ped faces; few, fine and medium, black concretions; extremely acid; gradual, wavy boundary.

B3—70 to 90 inches, strong-brown (7.5YR 5/6) silt loam; light-gray (10YR 7/1) ped surfaces; weak, coarse, subangular blocky structure; firm; extremely acid.

The A horizon is gray, light gray, or light brownish gray and ranges from 20 to 36 inches in thickness. Tongues from the A2 horizon extend well into the B horizon. The B horizon is gray (10YR 6/1), light gray (10YR 7/1), or light brownish gray (2.5Y 6/2). It ranges from silt loam through silty clay loam. Yellowish-brown mottles are likely throughout the profile. The soil is very strongly acid to extremely acid.

Guyton silt loam, occasionally flooded (Gu).—This soil is in depressions. It is wet for a long period after a rain. It is covered with as much as 1 foot of water for long periods during winter and spring. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer and subsoil are very strongly acid to extremely acid. Permeability is very

slow, and runoff is very slow to ponded. Available water capacity is high.

Included in mapping are small areas of Caddo, Messer, and Glenmora soils.

Most of the acreage is wooded. Flooding occurs mostly in winter and spring, but available moisture is inadequate during dry periods late in summer and in fall in many years. The principal limitations are flooding, low fertility, and wetness.

Crops and pasture.—Flooding is too severe for most crops in most years. Rice, soybeans, and grain sorghum can be grown if they are planted late and flooding can be controlled. Common bermudagrass is a suitable pasture plant. Response to fertilizer is poor. Lime is needed for pasture and cropland. Capability unit IVw–1.

Wildlife.—Open areas are few. This soil is not suitable habitat for openland wildlife, but it is well suited to woodland management for deer, squirrel, and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is also well suited as habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are water oak, pin oak, and willow oak and some sweetgum and loblolly pine. Trees suitable for commercial planting are oak, gum, and slash and loblolly pines. Potential productivity is high. The site index for loblolly pine is 90. Seedling mortality is moderate. Because of wetness and occasional flooding, restrictions on the use of equipment are severe.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, chalky bluestem, plumegrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Guyton-Cascilla complex, frequently flooded (Gy).—These are nearly level, poorly drained and well-drained loamy soils on narrow drainageways in the northwestern part of the parish. Flooding occurs frequently, generally in winter and spring and early in summer. The wet, frequently flooded Guyton soil makes up about 60 percent of the acreage, and the well-drained, frequently flooded Cascilla soil 30 percent.

The Guyton soil has a thick, light brownish-gray silt loam surface layer. The subsoil is light brownish-gray silty clay loam mottled with yellowish brown. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer and subsoil are very strongly acid. Permeability is very slow, and runoff is very slow to ponded. Available water capacity is high.

The Cascilla soil has a surface layer of dark-brown silt loam. The subsoil is brownish silt loam. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is medium acid to strongly acid, and the subsoil is very strongly acid. Permeability is moderate. Runoff is medium after floodwaters recede. Available water capacity is high.

Included in mapping are small areas of Frost and Basile soils.

Almost all the acreage is wooded. Floodwaters ranging from 1 to 8 feet in depth inundate these soils for periods of a few hours to 10 days, generally one to six times a year. The supply of soil moisture, however, is inadequate during dry periods in some years. The principal limitations are frequent flooding, wetness, and low fertility.

Crops and pasture.—Flooding is too severe for cultivated crops in most years. Small areas have been cleared for pasture. Common bermudagrass is a suitable pasture plant. Pasture plants respond fairly well to fertilizer. Lime is needed. Capability unit Vw–3.

Wildlife.—There are only a few, small open areas. The Cascilla soil is poorly suited as habitat for quail, dove, rabbit, and other openland wildlife. The Guyton soil is not suited. Both soils are well suited as habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soils are also well suited as habitat for ducks, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are sweetgum, loblolly pine, water oak, and baldcypress. Trees suitable for commercial planting are cottonwood, sycamore, and loblolly and slash pines. Potential productivity is high on the Guyton soil and very high on the Cascilla soil. The site index for loblolly pine is 90 on the Guyton soil and 102 on the Cascilla soil. Seedling mortality is moderate on the Guyton soil and slight on the Cascilla soil. Restrictions on the use of equipment are severe on the Guyton soil and slight on the Cascilla soil. Wooded areas should not be grazed.

Jeanerette Series

The Jeanerette series consists of dark-colored, poorly drained soils in broad depressions in the southeast part of the parish.

In a representative profile, the surface layer is very dark gray silt loam 10 inches thick. The subsoil is very dark grayish-brown silty clay loam in the upper 8 inches, dark-gray silty clay loam in the next 14 inches, and dark-gray and gray silt loam below.

Jeanerette soils are associated with Crowley, Patoutville, and Mowata soils. They are darker and more poorly drained than Crowley and Patoutville soils and are darker than Mowata soils.

Representative profile of Jeanerette silt loam, about 5 miles southeast of Ville Platte, 0.2 mile west of road along headland, sec. 75, T. 5 S., R. 2 E.:

Ap—0 to 6 inches, very dark gray (10YR 3/1) silt loam; moderate, fine, granular structure; very friable; many fine roots; few, fine, hard, brown concretions; slightly acid; clear, wavy boundary.

A1—6 to 10 inches, very dark gray (10YR 3/1) silt loam; weak, medium, subangular blocky structure; friable; few fine roots; few fine pores; few, fine, soft, brown concretions; mildly alkaline; gradual, wavy boundary.

B21tg—10 to 18 inches, very dark grayish-brown (2.5Y 3/2) silty clay loam; weak, coarse, prismatic structure parting to weak, medium, subangular blocky; firm; few fine roots along ped faces; few fine pores lined with clay; patchy thin clay films along ped surfaces; few, fine, soft, brown concretions; few, medium, hard carbonate concretions; mildly alkaline; gradual, wavy boundary.

B22tgca—18 to 32 inches, dark-gray (10YR 4/1) silty clay loam; many, medium, distinct, light olive-brown (2.5Y 5/4) mottles; weak, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm; few fine roots along ped faces; few fine pores lined with clay; patchy thin clay films on ped surfaces; few, fine, soft, brown concretions; many, medium, hard carbonate concretions; mildly alkaline; gradual, wavy boundary.

B3g—32 to 50 inches, dark-gray (10YR 4/1) and gray (10YR 5/1) silt loam; many, medium, distinct, light olive-brown (2.5Y 5/4) mottles; weak, coarse, subangular blocky structure; friable; many, fine, hard, black concretions; mildly alkaline.

The A horizon is very dark gray (10YR 3/1) or black (10YR 2/1) and is 10 to 15 inches thick. The Btg horizon is very dark grayish brown (2.5Y 3/2; 10YR 3/2), very dark gray (10YR 3/1), dark gray (10YR 4/1), or gray (10YR 5/1). It is silt loam or silty clay loam. The A horizon is medium acid to neutral. The Btg horizon is neutral to moderately alkaline.

Jeanerette silt loam (Je).—This soil is in broad depressions in the southeastern part of the parish. It is waterlogged for an extended period after a rain because runoff is slow. This soil has the profile described as representative for the series. The surface layer is slightly acid, and the subsoil is mildly alkaline. Permeability is slow. Available water capacity is high.

Included in mapping are small areas of Patoutville, Crowley, and Mowata soils.

Almost all the acreage is used for crops and pasture. The soil is wet during winter and spring. The principal limitation is wetness.

Crops and pasture.—The soil is moderately well suited to most crops and pasture plants grown locally. Suitable crops are cotton, corn, rice, sweetpotatoes, and soybeans. Cotton is the principal crop. Suitable pasture plants are dallisgrass, bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch. The soil is well suited to irrigation by flooding. It is fairly easy to keep in good tilth, but if it is under continuous cultivation, a plowpan is likely to form.

Land smoothing and water leveling improve drainage and increase the effectiveness of flood irrigation and farm equipment. Where row crops are grown, proper row direction improves drainage. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIw–2.

Wildlife.—Open areas are extensive, but the soil is poorly suited as habitat for dove, quail, rabbit, and other openland wildlife. It is also not suited to woodland wildlife because there are no trees. It is well suited as habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are oak and sweetgum. Potential productivity is high. The site index for green ash is 80, sweetgum 90, and cherrybark oak 90. Wooded areas should not be grazed.

Kenney Series, Sandy Subsoil Variant

The Kenney series, sandy subsoil variant, is well drained and hilly and is sandy throughout the profile. The one soil in this series is in the extreme northern part of the parish. It is similar to the typical Kenney soils in many respects, but is outside the range defined for that series, principally because it has a coarser textured subsoil.

In a representative profile, the surface layer is dark grayish-brown fine sand about 6 inches thick. The subsoil also is fine sand. It extends to a depth of 80 inches. The upper 14 inches is strong brown, the next 6 inches is dark brown, and the lower 54 inches is reddish brown.

The Kenney sandy variant is associated with Ruston and McKamie soils. It is more sandy in the subsoil than those soils.

Representative profile of Kenney fine sand, sandy subsoil variant, hilly, about 8 miles north of Turkey Creek, 70 feet east of road, NE¼NW¼ sec. 24, T. 1 S., R. 1 W.:

A1—0 to 6 inches, dark grayish-brown (10YR 4/2) fine sand; structureless; loose; many fine and medium roots; medium acid; gradual, wavy boundary.

B11—6 to 20 inches, strong-brown (7.5YR 5/8) fine sand; very weak, fine, granular structure; very friable; many fine and medium roots; medium acid; gradual, wavy boundary.

B12—20 to 26 inches, dark-brown (10YR 4/3) fine sand; very weak, fine, granular structure; very friable; few fine roots; slightly acid; gradual, wavy boundary.

B2t—26 to 60 inches, reddish-brown (5YR 4/4) fine sand; very weak, medium, granular structure; very friable; sand grains coated with oxides and clay; slightly acid; gradual, wavy boundary.

B3t—60 to 80 inches, reddish-brown (5YR 4/4) fine sand; very weak, fine, granular structure; very friable; sand grains coated with oxides and clay; few clay bridges between sand grains; strongly acid.

The A horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3). The upper part of the B horizon is brown (10YR 4/3, 5/3), yellowish brown (10YR 5/4, 5/6, 5/8), or strong brown (7.5YR 5/6, 5/8). The lower part of the B horizon is reddish brown (5YR 4/4, 5/4) or yellowish red (5YR 4/6, 5/6). The A horizon is medium acid to slightly acid. The lower part of the B horizon is strongly acid.

Kenney fine sand, sandy subsoil variant, hilly (KeE).—This is a sandy, well-drained soil in the extreme northern part of the parish. It has the profile described as representative for the series. It is medium acid to slightly acid in the surface layer and in the upper part of the subsoil and grades to strongly acid below. This soil absorbs most of the rainwater. Permeability is moderately rapid. Available water capacity is low.

Included in mapping are small areas of Ruston and McKamie soils.

Most of the acreage is wooded. Moisture is inadequate for plants during dry periods in most years. The principal limitations are low fertility, droughtiness, slope, and poor traction. This soil is a suitable source for sand.

Crops and pasture.—Slopes are too steep and droughtiness is too severe for cultivated crops in most years. Small areas have been cleared for pasture. Coastal bermudagrass and other deep-rooted grasses are suitable pasture plants. Response to fertilizer is fair. Lime is needed. Capability unit VIe–2.

Wildlife.—There are only a few small open areas. The soil is poorly suited as habitat for dove, quail, rabbit, and other openland wildlife. It is also poorly suited to deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and provide supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly pine, hickory, and oak. Trees suitable for planting are loblolly, longleaf, and slash pines. Potential productivity is

moderately high. The site index for slash pine is 82. Seedling mortality is moderate. Restrictions on the use of equipment are moderate because of poor trafficability.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, slender bluestem, three-awn, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,200 pounds air-dry weight.

Latanier Series

The Latanier series consists of somewhat poorly drained, nearly level soils that have a clayey surface layer. The upper part of the subsoil is clayey and the lower part is loamy. These soils are in broad areas at intermediate elevations in the northeastern part of the parish.

In a representative profile, the surface layer is dark-brown clay 4 inches thick. The subsoil is dark reddish-brown clay. At a depth of 22 inches is brownish silty clay loam. Below a depth of 34 inches is yellowish-red silt loam.

Latanier soils are associated with Gallion, Moreland, and Perry soils. They are more poorly drained and have a finer textured surface layer than Gallion soils. They have a coarser textured subsoil than Moreland and Perry soils and are better drained than Perry soils.

Representative profile of Latanier clay, about 19 miles north of Ville Platte at Lone Pine, 300 feet south of road near the center of sec. 24, T. 1 S., R. 1 E.:

Ap—0 to 4 inches, dark-brown (7.5YR 3/2) clay; moderate, fine, angular blocky structure; firm; few fine roots; neutral; abrupt, wavy boundary.

B1—4 to 22 inches, dark reddish-brown (5YR 3/3) clay; strong, fine, subangular blocky structure; very firm; few fine roots; few medium slickensides; common shiny ped surfaces; few, very fine, soft, black concretions; mildly alkaline; abrupt, wavy boundary.

IIAb—22 to 28 inches, dark grayish-brown (10YR 4/2) silty clay loam; common, medium, faint dark-brown (10YR 4/3) and prominent yellowish-red (5YR 4/8) mottles; weak, fine, subangular blocky structure; firm; few fine roots; few, fine, soft, black and brown concretions; mildly alkaline; gradual, wavy boundary.

IIB2tb—28 to 34 inches, dark reddish-brown (5YR 3/4) silty clay loam; moderate, medium, subangular blocky structure; common, fine, soft, black concretions; moderately alkaline; gradual, wavy boundary.

IIC—34 to 46 inches, yellowish-red (5YR 4/6) silt loam; structureless; platy bedding planes; friable; few, very fine, soft, black concretions; moderately alkaline, calcareous.

The A horizon is very dark gray (10YR 3/1), very dark grayish brown (10YR 3/2), dark brown (10YR 3/3; 7.5YR 3/2), or dark reddish brown (5YR 3/2, 3/3). It is 10 inches or more thick. The clayey material is 20 to 34 inches thick. The IIAb, IIBt, and IIC horizons are dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), brown (10YR 4/3, 5/3), yellowish red (5YR 4/6, 5/6), dark reddish brown (5YR 3/4), or dark red (2.5YR 3/6). The II horizon is stratified sandy loam, silt loam, or clay. The A horizon is slightly acid to moderately alkaline, and the underlying horizons are neutral to moderately alkaline. The lower horizons are calcareous in places.

Latanier clay (La).—This nearly level soil is on bottom land at intermediate elevations in the northeastern part of the parish. It is wet for significant periods because runoff is slow and permeability is very slow. This soil has the profile described as representative for the series. Available water capacity is moderate. Generally, this soil has a low content of nitrogen, a high content of phosphorus, and a medium content of potassium. It is slightly acid in the surface layer and mildly alkaline or moderately alkaline in the underlying layers.

Included in mapping are areas of Gallion soil and small areas of Moreland and Perry soils.

About half the acreage is in crops and pasture. The rest is mostly wooded. The soil is wet in winter and spring, but soil moisture is inadequate during dry periods in most years. The principal limitations are wetness and poor tilth.

Crops and pasture.—This soil is suited to most crops and pasture plants grown locally. Rice is well suited, and soybeans, grain sorghum, and cotton are moderately well suited. Corn is not well suited. Suitable pasture plants are dallisgrass, bermudagrass, white clover, Persian clover, vetch, alfalfa, and fescue. Rice and soybeans are the principal crops. This soil is well suited to flood or row irrigation. It becomes cloddy when worked, and seedbed preparation is difficult. Deep cracks form in dry weather. Plants are difficult to establish when the supply of moisture is inadequate. Keeping this soil in good tilth is difficult.

Land smoothing and water leveling increase the efficiency of flood irrigation and drainage and the efficiency in the use of farm equipment. Plowing in the fall improves tilth. Where row crops are grown, proper row direction is needed to improve drainage. Corrugation of pasture improves drainage. Response to nitrogen fertilizer is good. Capability unit IIIw-6.

Wildlife.—Open areas provide habitat for dove, quail, rabbit, and other openland wildlife. If properly managed, wooded areas provide habitat for deer, squirrel, and other woodland wildlife. Planting winter pasture plants on the edges of fields that border wooded areas provides a good supply of food for deer and rabbits. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. This soil is well suited as habitat for crawfish, ducks, geese, snipe, and other wetland wildlife.

Woodland.—The principal trees are cherrybark oak, water oak, green ash, and sweetgum. Trees suitable for commercial planting are oak, sycamore, and cottonwood. Potential productivity is high. The site index is 85 for green ash, 95 for sweetgum, and 105 for cottonwood. Seedling mortality is moderate. Because of wetness, restrictions on the use of equipment are severe. Wooded areas should not be grazed.

Loring Series

The Loring series consists of gently sloping, moderately well drained soils that have a fragipan. These soils are in narrow areas along Bayou Petit Passe and Bayou Grand Louis in the eastern part of the parish.

In a representative profile, the surface layer is brown silt loam 5 inches thick. The subsoil is brown silty clay

loam. At a depth of 23 inches is a thick, brownish fragipan.

Loring soils are associated with Olivier, Muskogee, and McKamie soils. They are better drained than Olivier soils. They differ from Muskogee soils in being better drained and in not having a clayey subsoil. They are not so well drained as McKamie soils.

Representative profile of Loring silt loam, 3 to 5 percent slopes, eroded, about 5 miles east of Ville Platte in the northeast corner of sec. 55, T. 4 S., R. 3 E.:

Ap—0 to 5 inches, brown (10YR 4/3) silt loam; weak, fine, granular structure; friable; many fine roots; common, fine, soft, brown concretions; medium acid; abrupt, smooth boundary.

B21t—5 to 23 inches, brown (7.5YR 4/4) silty clay loam; moderate, medium and fine, subangular blocky structure; friable; few fine roots; few fine pores lined with clay; continuous thick clay films and common, patchy, black stains on ped surfaces; few, fine, soft, black concretions; strongly acid; gradual, wavy boundary.

Bx1—23 to 42 inches, dark yellowish-brown (10YR 3/4) and brown (7.5YR 5/4) silt loam, pale-brown (10YR 6/3) ped surfaces; moderate, coarse, prismatic structure parting to moderate, coarse, subangular blocky; firm, slightly brittle; few fine roots along ped surfaces; common fine pores inside peds lined with clay films and black stains; patchy thin clay films and black stains on secondary ped faces; thick silt coats on primary vertical ped faces; common, medium, hard, brown concretions; strongly acid; clear, wavy boundary.

Bx2—42 to 60 inches, brown (10YR 4/3) and pale-brown (10YR 6/3) silt loam, thick, light brownish-gray (10YR 6/2), silty, vertical streaks; weak, coarse, prismatic structure; firm, slightly brittle; many fine pores lined with clay; black stains on ped faces; medium acid.

The Ap horizon is brown (10YR 4/3, 5/3; 7.5YR 4/4) and ranges from 3 to 8 inches in thickness. The Bt horizon is brown (7.5YR 4/4; 10YR 4/3), dark yellowish brown (10YR 4/4), or yellowish brown (10YR 5/4). It is silt loam or silty clay loam. The Bx horizon has pale-brown (10YR 6/3) or light brownish-gray (10YR 6/2) ped surfaces and is yellowish brown (10YR 5/4), dark yellowish brown (10YR 4/4, 4/3), or brown (7.5YR 4/4). It is silt loam or silty clay loam. The Ap horizon is medium acid to slightly acid, and the Bt horizon is medium acid to strongly acid.

Loring silt loam, 3 to 5 percent slopes, eroded (loC2).—This soil is in long, narrow areas in the eastern part of the parish. It is wet for a short time after a rain because permeability is moderately slow in the fragipan. This soil has the profile described as representative for the series. Generally, the content of nitrogen is very low, and phosphorous and potassium are low. The surface layer is medium acid, and the subsoil is strongly acid. Runoff is medium to rapid. Available water capacity is high.

Included in mapping are small areas of Olivier, McKamie, and Muskogee soils.

Most of the acreage is used for crops and pasture; about 25 percent is in pasture. Little moisture is available to plants during long dry periods late in summer and in fall of some years. The principal limitations are the erosion hazard and moderately low fertility.

Crops and pasture.—This soil is well suited to most crops and pasture plants grown locally. Suited crops are sweetpotatoes, cotton, corn, soybeans, and truck crops. The principal crop is sweetpotatoes. Suited pasture plants are vetch, millet, ryegrass, bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover. The soil is easy to till and to keep in good tilth, but if it is cultivated to the same depth every year, a plowpan can form. If it is clean tilled, terracing, contour cultivation, or stripcropping is needed to control runoff and reduce the hazard of erosion. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIIe-2.

Wildlife.—This soil is suitable habitat for dove, quail, rabbit, and other openland wildlife. Planting winter pasture plants on the edges of fields that border wooded areas provides a good supply of food for deer and rabbit. The soil is suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. This soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are oak, green ash, and sweetgum. Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is high. The site index for loblolly pine is 95. Seedling mortality is slight. Restrictions on the use of equipment are slight.

Well managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Mamou Series

The Mamou series consists of somewhat poorly drained soils that are loamy throughout the profile. These soils are in long, narrow bands at higher elevations in the southwest part of the parish.

In a representative profile, the surface layer is grayish-brown silt loam, 6 inches thick. The subsurface layer is yellowish-brown silt loam mottled with gray. It is about 5 inches thick. The silty clay loam subsoil is mottled red and dark gray in the upper part and yellowish brown in the lower part. Below a depth of 26 inches is mottled yellowish-brown loam.

Mamou soils are associated with Crowley, Mowata, and Vidrine soils. They are better drained and have less clay in the subsoil than Crowley and Mowata soils. They have a thinner subsoil than Vidrine soils.

Representative profile of Mamou silt loam, 1 to 3 percent slopes, about 5 miles south of Mamou, 220 feet south of road, NW¼SE¼ sec. 2, T. 6 S., R. 1 W.:

Ap—0 to 6 inches, grayish-brown (10YR 5/2) silt loam; common, fine, distinct, yellowish-brown mottles; weak, fine, granular structure; friable; few fine roots; few, patchy, black stains; many, fine, soft, brown concretions; slightly acid; clear, smooth boundary.

A2—6 to 11 inches, yellowish-brown (10 YR 5/4) silt loam; common, fine, distinct, grayish-brown mottles; weak, medium, subangular blocky structure; friable; common fine pores; few, fine, soft, red concretions; slightly acid; abrupt, wavy boundary.

B2tg—11 to 19 inches, mottled dark-gray (10YR 4/1), very dark gray (10YR 3/1), and dark-red (2.5YR 3/6) silty clay loam; ped surfaces are very dark gray (10YR 3/1); weak, coarse, prismatic structure parting to strong, medium, subangular blocky; firm; common fine roots along ped surfaces; continuous thick clay films on ped surfaces; few very fine pores; few, fine, soft, black and brown concretions; slightly acid; clear, wavy boundary.

B3tg—19 to 26 inches, yellowish-brown (10YR 5/4) silty clay loam; dark grayish-brown (10YR 4/2) ped surfaces; moderate, medium, subangular blocky structure; firm; few fine pores; continuous thick clay films and patchy black stains on ped surfaces; few, fine, soft, red and black concretions; slightly acid; diffuse, wavy boundary.

C—26 to 64 inches, mottled light yellowish-brown (10YR 6/4) and yellowish-brown (10YR 5/4) loam; common, medium, distinct, strong-brown (7.5YR 5/8) mottles; massive; firm; few, medium, hard, brown concretions with red interiors; neutral.

The Ap horizon is dark gray (10YR 4/1), gray (10YR 5/1), grayish brown (10YR 5/2), or dark grayish brown (10YR 4/2). The A2 horizon is brown (10YR 4/3, 5/3), pale brown (10YR 6/3), dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/4, 5/6), or light yellowish brown (10YR 6/4) and has a few grayish mottles. The boundary between the A2 and Btg horizons is abrupt to clear and wavy. Ped surfaces in the Btg horizon are very dark gray (10YR 3/1), very dark grayish brown (10YR 3/2), dark gray (10YR 4/1), dark grayish brown (10YR 4/2), gray (10YR 5/1), or grayish brown (10YR 5/2); ped interiors are 30 to 60 percent mottles of red (2.5YR 4/6, 4/8, 5/6, 5/8), yellowish red (5YR 4/6, 5/6), dark red (10R 3/6, 2.5YR 3/6), or strong brown (7.5YR 5/6, 5/8). The Btg horizon is silt loam or silty clay loam. The C horizon ranges from gray to red and from loam to silty clay loam. A clay stratum occurs in some places. The A horizon is slightly acid to strongly acid, and the Btg horizon is strongly acid to slightly acid grading to neutral.

Mamou silt loam, 1 to 3 percent slopes (MaB).—This soil is at the higher elevations in the southwestern part of the parish. It is wet for extended periods because permeability is slow. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, and potassium is low. The surface layer is slightly acid, and the subsoil is slightly acid to neutral. Runoff is medium. The available water capacity is high.

Included in mapping are small areas of Crowley, Mowata, and Vidrine soils.

Most of the acreage is used for crops and pasture. The soil is saturated for short periods in winter and spring, but lacks adequate moisture for plants during dry periods in some years. The principal limitations are low fertility, the erosion hazard, and wetness.

Crops and pasture.—The soil is well suited to most crops and pasture plants grown locally. Suitable crops are soybeans, sweetpotatoes, cotton, and rice. Rice is fairly well suited and is the principal crop. Suitable pasture plants are dallisgrass, bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soil is fairly well suited to flood irrigation and is fairly easy to work and to keep in good tilth. A crust is likely to form after a heavy rain, and if the soil is under continuous cultivation, a plowpan is likely to form.

Land smoothing and water leveling increase the efficiency of flood irrigation. Where row crops are grown, proper row direction is needed to control erosion and conserve moisture. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice can help to overcome the effects of crusting. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIw–1.

Wildlife.—Nearly all the acreage is openland and is suitable habitat for dove, quail, rabbit, and other openland wildlife. Grain crops attract these species. The soil is also suitable habitat for ducks, geese, crawfish, snipe, and other wetland wildlife. It is not suitable for woodland wildlife.

Woodland.—Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is high. The site index for loblolly pine is 90. Seedling mortality is slight. Restrictions on the use of equipment are moderate because of wetness in winter and spring.

Well managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniola, rushes, sedges, and low panicum remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

McKamie Series

The McKamie series consists of well-drained, steep and strongly sloping soils that have a red, clayey subsoil. These soils occur as narrow areas in the northern part of the parish.

In a representative profile, the surface layer is dark grayish-brown very fine sandy loam to silty clay loam 3 inches thick. The subsoil is red clay 27 inches thick. Below this is yellowish-red very fine sandy loam about 6 inches thick over dark-red clay that extends to a depth of 70 inches.

McKamie soils are associated with Muskogee, Dossman, and Kenney soils. They are better drained than Muskogee soils and have a finer textured subsoil than Dossman and Kenney soils.

Representative profile of McKamie very fine sandy loam, 8 to 30 percent slopes, about 4 miles north of Ville Platte in Chicot State Park, NW¼SW¼ sec. 16, T. 3 S., R. 2 E.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) very fine sandy loam; weak, fine, granular structure; very friable; many fine and medium roots; very strongly acid; clear, wavy boundary.

B2t—3 to 30 inches, red (2.5YR 4/6) clay; moderate, coarse, prismatic structure parting to moderate, medium, subangular and angular blocky; very firm; few fine roots along ped surfaces; patchy thick clay films and black stains on ped surfaces; common, fine, shiny ped surfaces; common medium slickensides; thin silt coats along vertical ped faces; strongly acid; abrupt, wavy boundary.

IIC1—30 to 36 inches, yellowish-red (5YR 5/6) very fine sandy loam; weak, thin, platy structure as the result of bedding planes; firm; common fine and medium

roots; common fine pores lined with patchy black stains; slightly acid; abrupt, wavy boundary.

IIC2—36 to 70 inches, dark-red (2.5YR 3/6) clay; massive breaking to angular fragments; firm; few fine roots; few fine pores; few slickensides; neutral.

The A horizon ranges from dark grayish brown (10YR 4/2) to brown (10YR 4/3, 5/3). It ranges from silt loam or very fine sandy loam to clay. There is a brownish A3 or B1 horizon in some places. The Bt horizon is red (2.5YR 4/6), yellowish red (5YR 5/6), or dark red (2.5YR 3/6). It is clay or silty clay. The C horizon in places is stratified silt, sand, or clay and is generally reddish or yellowish in color. The A horizon is very strongly acid to strongly acid. The B and C horizons are neutral to very strongly acid in the upper part but range to moderately alkaline below a depth of 30 inches.

McKamie soils, 8 to 30 percent slopes (McE).—These soils are well drained and have a red clayey subsoil. They are along the lower valley walls in the northeastern part of the parish. These soils have the profile described as representative for the series. Clayey surface layers are common in eroded areas. Generally, the content of nitrogen, phosphorus, and potassium is low. The surface layer is very strongly acid, and the subsoil is strongly acid grading to neutral below. Permeability is very slow, and runoff is rapid. Available water capacity is moderate.

Included in mapping are small areas of Dossman, Muskogee, and Kenney soils.

About 95 percent of the acreage is wooded. Small areas are used for pasture, nature trails, and parks. Pasture plants lack sufficient moisture in places during dry periods in summer and fall. The principal limitations for crops are steep slopes, the erosion hazard, and low fertility.

Crops and pasture.—These soils are generally not suited to cultivated crops because of the erosion hazard and the steep, irregular slopes. Pasture is fairly well suited on the upper, smoother slopes but is very difficult to manage on the steeper slopes. Suited pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, and vetch. Response to fertilizer is fair. Capability unit VIe-3.

Wildlife.—These soils are not suitable habitat for openland wildlife, but are suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soils are not suitable habitat for wetland wildlife.

Woodland.—The principal trees are slash, longleaf, and loblolly pines and hickory, oak, and beech. Trees suitable for commercial planting are slash pine and loblolly pine. Potential productivity is moderately high. The site index for loblolly pine is 83. Seedling mortality is slight. Restrictions on the use of equipment are moderate to severe because of the steep, irregular slopes.

Well managed wooded areas can support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, indiangrass, slender bluestem, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,600 pounds air-dry weight.

Messer Series

The Messer series consists of moderately well drained, slowly permeable soils. These soils occur as small mounds.

In a representative profile, the surface layer is grayish-brown silt loam 5 inches thick over a thin, pale-brown subsurface layer. The subsoil is light yellowish-brown silt loam to a depth of 31 inches and is yellowish-brown silty clay loam below.

The Messer soils in Evangeline Parish are mapped only with Caddo soils. They are better drained than Caddo soils.

Representative profile of Messer silt loam, in an area of Caddo-Messer complex, about 10 miles west of Pine Prairie, 150 feet northwest of road on a mound in NE¼SE¼ sec. 5, T. 3 S., R. 2 W.:

A1—0 to 5 inches, grayish-brown (10YR 5/2) silt loam; common, fine, faint, light brownish-gray mottles; weak, fine, granular structure; very friable; many fine roots; few fine pores; common, fine, soft, brown concretions; strongly acid; gradual, wavy boundary.

A2—5 to 8 inches, pale-brown (10YR 6/3) silt loam; common, fine, faint, brown mottles; weak, fine, subangular blocky structure; very friable; common fine roots; many fine pores; common, fine, soft, brown concretions; very strongly acid; clear, irregular boundary.

B1—8 to 31 inches, light yellowish-brown (10YR 6/4) silt loam; common, medium, faint, pale-brown (10YR 6/3), vertical streaks; weak, coarse, subangular blocky structure; firm; few fine roots; many fine pores lined with white silt; many, medium, soft, brown concretions; very strongly acid; clear, irregular boundary.

B21t&A'2—31 to 35 inches, yellowish-brown (10YR 5/4) silty clay loam; common, medium, prominent, yellowish-red (5YR 4/6) mottles; moderate, medium, subangular blocky structure; firm; few fine roots between peds; common fine pores; patchy thick clay films on horizontal ped surfaces; many, coarse, distinct, pale-brown (10YR 6/3) silt pockets and ped coats; common, medium, soft, yellowish-red concretions; very strongly acid; clear, wavy boundary.

B22t—35 to 63 inches, yellowish-brown (10YR 5/4) silty clay loam; common, medium, prominent, red (2.5Y 4/6) mottles in the upper part and many, coarse, distinct, yellowish-brown (10YR 5/6) mottles in the lower part; moderate, medium, subangular blocky structure; firm; common fine pores; continuous thick clay films on the gray (10YR 6/1) ped surfaces; few, medium, soft, yellowish-red concretions; strongly acid; gradual, wavy boundary.

B3—63 to 90 inches, pale-olive (5Y 6/3) silty clay loam; common, medium, prominent, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; firm; continuous thick clay films on horizontal ped surfaces; thin silt coats on vertical ped faces; few, medium, soft, brown concretions; medium acid.

The A1 horizon is 3 to 12 inches thick and is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3). The A2 horizon is pale brown (10YR 6/3), very pale brown (10YR 7/3), or light yellowish brown (10YR 6/4). The B1 horizon is brown (10YR 5/3), yellowish brown (10YR 5/4, 5/6), pale brown (10YR 6/3), or light yellowish brown (10YR 6/4). The Bt horizon is tongued and is brown (10YR 4/3, 5/3) mottled with yellowish brown, strong brown, yellowish red, red, gray, and grayish brown. It ranges from silt loam to silty clay loam. The A horizon is strongly acid. The B horizon is very strongly acid but grades to medium acid with increasing depth.

Midland Series

The Midland series consists of poorly drained soils that have a clayey subsoil. These soils are in broad, slightly concave areas at lower elevations in the southern part of the parish.

In a representative profile, the surface layer is dark-gray silty clay loam 5 inches thick. The subsoil is gray to dark-gray clay mottled with brown and yellowish brown.

Midland soils are associated with Vidrine, Crowley, and Mowata soils. They have a finer textured surface layer than each of these soils and are more poorly drained than Crowley and Vidrine soils.

Representative profile of Midland silty clay loam, about 3 miles north of Basile, in the western edge of sec. 16, T. 6 S., R. 2 W.:

Ap—0 to 5 inches, dark-gray (10YR 4/1) silty clay loam; moderate, medium, subangular blocky structure; firm; many fine roots; few, fine, hard, dark-brown concretions; medium acid; abrupt, smooth boundary.

B21tg—5 to 17 inches, gray (10YR 5/1) clay; many, fine, distinct, brown (10YR 5/3) mottles and few, medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; very firm; few fine roots; few fine pores; patchy thin clay films on ped surfaces; thin silt coats on vertical ped surfaces; common, fine, shiny ped surfaces; few, fine, soft, black and brown concretions; very strongly acid; gradual, wavy boundary.

B22tg—17 to 38 inches, dark-gray (10YR 4/1) and gray (10YR 5/1) clay; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; very firm; patchy thin clay films on ped surfaces; many shiny ped faces; few medium slickensides; few, patchy, black stains on ped faces; common, fine, soft, brown concretions; strongly acid; gradual, wavy boundary.

Cg—38 to 57 inches, gray (5Y 5/1) clay; few, fine, faint, olive mottles and common, medium, distinct, yellowish-brown (10YR 5/8) mottles; massive; very firm; common slickensides; few, medium, hard, black and brown concretions; neutral.

The A1 horizon is dark gray (10YR 4/1) or gray (10YR 5/1) and is 3 to 7 inches thick. The Btg horizon is gray (10YR 5/1) or dark gray (10YR 4/1). It is silty clay or clay. The A horizon is medium acid to strongly acid. The Btg horizon is medium acid to very strongly acid grading to neutral below.

Midland silty clay loam (Md).—This soil is in broad, slightly concave areas in the southern part of the parish. It is wet for extended periods because runoff is slow and permeability is very slow in the clayey subsoil. This soil has the profile described as representative for the series. Generally, the content of nitrogen and phosphorus is very low, and the potassium content is low. The soil is medium acid at the surface and grades to very strongly acid below. Available water capacity is moderate.

Included in mapping are small areas of Mowata, Crowley, and Vidrine soils.

Most of the acreage is used for crops and pasture. The soil is saturated in winter and spring, and water accumulates on the surface after a rain. The moisture available to plants, however, is inadequate during dry periods in most years. The principal limitations are wetness and low fertility.

Crops and pasture.—This soil is fairly well suited to the few crops and pasture plants grown locally. Suited crops are rice and soybeans. Rice is well suited and is the principal crop. Suited pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, and white clover.

The soil is well suited to flood irrigation. It is difficult to keep in good tilth. Fall plowing helps in preparing a good seedbed in the spring. Rice is generally water planted. Land smoothing and water leveling increase the efficiency of flood irrigation and improve drainage. Where row crops are grown, proper row direction is needed to improve drainage. Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIw–5.

Wildlife.—Open areas are extensive, but the soil is poorly suited as habitat for quail, dove, rabbits, and other openland wildlife. It is not suitable habitat for woodland wildlife. It is well suited as habitat for ducks, geese, snipe, crawfish, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are oak, sweetgum, and loblolly and slash pines. Potential productivity is high. The site index for sweetgum is about 86. Seedling mortality is slight. Restrictions on the use of equipment are severe because of wetness.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, chalky bluestem, plumegrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Moreland Series

The Moreland series consists of somewhat poorly drained, level soils that are clayey throughout the profile. These soils are in broad areas at the lower elevations in the northeastern part of the parish.

In a representative profile, clay extends to a depth of more than 40 inches. The surface layer is dark brown and 6 inches thick. The next layers are dark reddish brown, to a depth of 16 inches, and dark red clay below a depth of 16 inches.

Moreland soils are associated with Gallion, Latanier, and Perry soils. They are finer textured and more poorly drained than Gallion soils and are better drained than Perry soils. They do not have the loamy lower layers that are typical of Latanier soils.

Representative profile of Moreland clay, about 8 miles northeast of Ville Platte, NW¼NW¼ sec. 13, T. 3 S., R. 2 E.:

Ap—0 to 6 inches, dark-brown (7.5YR 3/2) clay; common, medium, prominent, dark reddish-brown (5YR 3/3) mottles; moderate, medium and fine, angular blocky structure; firm; common fine roots; neutral; abrupt, smooth boundary.

B2—6 to 13 inches, dark reddish-brown (5YR 3/3) clay; moderate, medium and fine, angular blocky structure; firm; few fine roots; shiny ped surfaces; neutral; clear, wavy boundary.

Ab—13 to 16 inches, dark reddish-brown (5YR 3/3) clay; many, medium, distinct, dark grayish-brown (10YR 4/2) mottles; moderate, fine, angular blocky struc-

ture; firm; shiny ped surfaces; mildly alkaline; abrupt, wavy boundary.

Bbca—16 to 40 inches, dark-red (2.5YR 3/6) clay; few, coarse, prominent, dark-gray (10YR 4/1) mottles; moderate, fine, angular blocky structure; firm; few large slickensides; shiny ped surfaces; many soft and hard carbonate concretions; moderately alkaline, calcareous; gradual, wavy boundary.

Cca—40 to 54 inches, stratified dark-red (2.5YR 3/6) clay and reddish-brown (5YR 4/4) silt loam; massive breaking to thick platy structure and thick bedding planes; common soft carbonate concretions; moderately alkaline, calcareous.

The A horizon is dark brown (7.5YR 3/2) or dark reddish brown (5YR 3/3). The upper part of the B horizon is dark reddish brown (5YR 3/3, 3/4), and the lower part is dark red (2.5YR 3/6) or dark reddish brown (5YR 3/3, 3/4). The C horizon is reddish or grayish stratified loam and clay. The A horizon is neutral to mildly alkaline, and the B horizon is mildly alkaline to moderately alkaline. It is calcareous in the lower part in some places.

Moreland clay (Mo).—This level, clayey soil is in broad areas at the lower elevations in the northeastern part of the parish. It is wet for extended periods because runoff is slow and permeability is very slow. This soil has the profile described as representative for the series. Generally, the nitrogen content is low, phosphorus is high, and potassium is medium. Available water capacity is moderate.

Included in mapping are small areas of Gallion, Latanier, and Perry soils.

About 75 percent of the acreage is wooded. A small acreage is used for crops and pasture. The soil is wet in winter and spring. It is flooded during rainy periods in some years but lacks adequate moisture for plants during dry periods in most years. The principal limitations are wetness, occasional flooding, and poor tilth.

Crops and pasture.—The soil is moderately well suited to most crops grown locally and is well suited to most pasture plants. Rice is well suited and is the principal crop. Moderately well suited crops are soybeans, cotton, and grain sorghum. Suited pasture plants are common bermudagrass, bahiagrass, ryegrass, fescue, and white clover. The soil becomes cloddy when worked, and preparing a seedbed is difficult. Deep cracks form in dry weather. Adequate stands are difficult to obtain unless there is adequate moisture. Keeping this soil in good tilth is difficult.

Land smoothing and water leveling increase the efficiency of flood irrigation, improve drainage, and increase the effectiveness of farm equipment. Fall plowing improves tilth. Where row crops are grown, proper row direction improves drainage. Corrugation of the soil improves drainage for pasture. Most crops respond to nitrogen fertilizer. Capability unit IIIw-6.

Wildlife.—This soil is suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees also favor an increase in the squirrel population and furnish supplemental food for deer. This soil is well suited as habitat for ducks, geese, snipe, crawfish, and other wetland wildlife.

Woodland.—The principal trees are cherrybark oak, water oak, green ash, sweetgum, and pecan. Trees suitable for commercial planting are oak, sycamore, and cottonwood. Potential productivity is high. The site index for green ash is 75, cottonwood 85, and sweetgum 90. Seedling mortality is moderate. Restrictions on the use of equipment are severe because of wetness. Wooded areas should not be grazed.

Mowata Series

The Mowata series consists of poorly drained soils that have a clayey subsoil. These soils are in broad, slightly concave areas at the lower elevations in the southern part of the parish.

In a representative profile, the surface and subsurface layers are gray silt loam and have a combined thickness of 23 inches. The subsoil is dark-gray silty clay above a depth of 33 inches and gray silty clay loam below.

Mowata soils are associated with Vidrine, Crowley, and Midland soils. They are more poorly drained than Vidrine soils. They are tongued and do not have the red mottles that are typical of Crowley soils. They have a coarser textured surface layer than Midland soils.

Representative profile of Mowata silt loam, about 4 miles south of Mamou in the NE¼NE¼ sec. 3, T. 6 S., R. 1 W.:

Ap—0 to 7 inches, gray (5YR 5/1) silt loam; common, fine, distinct, brown mottles; weak, fine, granular structure; friable; many fine roots; common, fine, hard, black concretions; medium acid; abrupt, wavy boundary.

A2g—7 to 23 inches, gray (10YR 5/1) silt loam; few, fine, distinct, dark yellowish-brown mottles; weak, medium, subangular blocky structure; friable; few fine roots; common fine pores lined with white silt and patchy thin clay films; few, medium, soft, black and brown concretions; wide tongues extend well into the horizon below; strongly acid; abrupt, irregular boundary.

B21tg—23 to 33 inches, dark-gray (10YR 4/1) silty clay; many, fine, distinct, yellowish-brown mottles; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm; few fine roots along ped surfaces; few fine pores lined with clay; continuous thick clay films on ped surfaces; silt coats along major vertical ped surfaces; common, patchy, very dark gray (10YR 3/1) stains on ped surfaces; strongly acid; gradual, wavy boundary.

B22tg—33 to 46 inches, gray (10YR 4/1) silty clay loam; many, fine, distinct, yellowish-brown and light olive-gray mottles; weak, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm; few fine roots; few fine pores; continuous thick clay films on horizontal ped surfaces; thin silt coats on vertical ped surfaces; few, medium, hard, black and brown concretions; common, patchy, black stains on ped surfaces; strongly acid; gradual, wavy boundary.

B23tg—46 to 60 inches, light olive-gray (5Y 6/2) silty clay loam; common, medium, distinct, olive-yellow (2.5Y 6/6) mottles; moderate, coarse, subangular blocky structure; firm; few fine roots; few fine pores; continuous thick clay films on ped faces; common, medium, hard, brown and black concretions; slightly acid.

The Ap or A1 horizon is dark gray (10YR 4/1), gray (10YR 5/1), dark grayish brown (10YR 4/2), or grayish brown (10YR 5/2) and is 4 to 8 inches thick. The A2 horizon is gray (10YR 5/1, 6/1). The Btg horizon is dark gray (10YR 4/1) or gray (10YR 5/1) mottled with yellowish brown and olive yellow. It is dominantly silty clay but ranges to silty clay loam in the lower part. The A horizon is medium acid to strongly acid. The B horizon is strongly acid to medium acid in the upper part and ranges to neutral or moderately alkaline in the lower part.

Mowata silt loam (Mt).—This soil is in broad, slightly concave areas in the southern part of the parish. It becomes waterlogged after a rain and is wet for extended periods because runoff is slow and permeability is very slow in the claypan subsoil. This soil has the profile described as representative for the series. Generally, the content of nitrogen and phosphorus is very low, and the potassium content is low. The soil is medium acid in the surface layer and strongly acid below. Available water capacity is moderate.

Included in mapping are small areas of Crowley and Vidrine soils.

Most of the acreage is used for crops and pasture. The soil is saturated in winter and early in spring, and water accumulates on the surface after a rain. Soil moisture, however, is inadequate during dry periods in most years. The principal limitations are wetness and low fertility.

Crops and pasture.—The soil is fairly well suited to most crops and pasture plants grown locally. Suited crops are rice, soybeans, cotton, and sweetpotatoes. Rice is well suited and is the principal crop. Suited pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soil is well suited to flood irrigation. It is fairly easy to keep in good tilth, but if it is under continuous cultivation, a plowpan is likely to form.

Land smoothing and water leveling increase the efficiency of flood irrigation and improve drainage. Where row crops are grown, proper row direction is needed to improve drainage. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIw–7.

Wildlife.—Open areas are extensive, but the soil is poorly suited as habitat for quail, dove, rabbit, and other openland wildlife. It is not suitable for woodland wildlife, but it is well suited as habitat for ducks, geese, snipe, crawfish, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are loblolly pine and slash pine. Potential productivity is high. The site index for loblolly pine is 87. Seedling mortality is moderate, and restrictions on the use of equipment are severe.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniola, rushes, sedges, and low panicum remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Muskogee Series

The Muskogee series consists of moderately well drained, acid soils on narrow escarpments in the northern part of the parish.

In a representative profile, the surface layer is grayish-brown silt loam 6 inches thick. The subsoil, to a depth of 22 inches, is yellowish-brown silty clay loam. Below a depth of 22 inches, it is gray and yellowish-brown clay mottled with red.

Muskogee soils are associated with Acadia, McKamie, and Loring soils. They are more poorly drained than McKamie soils and are better drained than Acadia soils. They are more clayey and less brittle in the subsoil than Loring soils.

The Muskogee soils in Evangeline Parish are mapped only with McKamie soils.

Representative profile of Muskogee silt loam in an area of Muskogee-McKamie complex, 3 to 8 percent slopes, eroded, about 2 miles west of Easton, 900 feet north of road in the NE¼NW¼ sec. 35, T. 3 S., R. 1 W.:

Ap—0 to 6 inches, grayish-brown (10YR 5/2) silt loam; few, fine, faint, brown mottles; weak, fine, granular structure; friable; many fine roots; few, fine, hard, black concretions; very strongly acid; abrupt, smooth boundary.

B21t—6 to 22 inches, yellowish-brown (10YR 5/4) silty clay loam; common, medium, prominent, red (2.5YR 4/6) mottles; moderate, medium, subangular blocky structure; firm; few fine roots; few fine pores lined with clay; continuous thin clay films on ped surfaces; few, fine, soft, brown concretions; very strongly acid; gradual, wavy boundary.

B22tg—22 to 58 inches, mottled gray (10YR 6/1) and yellowish-brown (10YR 5/8) silty clay; few, fine, prominent, red (2.5YR 4/6) mottles; moderate, fine, angular blocky structure; firm; many fine shiny ped surfaces; few, fine, hard, brown concretions; very strongly acid; gradual, wavy boundary.

B23tg—58 to 80 inches, mottled gray (10YR 6/1) and yellowish-red (5YR 4/6) clay; common, medium, distinct, yellowish-brown mottles; moderate, medium, angular blocky structure; very firm; many, medium, soft, brown concretions; medium acid.

The A horizon is grayish brown (10YR 5/2) or brown (10YR 5/3, 4/3). The B21t horizon is yellowish-brown (10YR 5/4, 5/6, 5/8) silt loam or silty clay loam that contains red mottles. The B22tg and B23tg horizons are mottled gray (10YR 6/1), yellowish brown (10YR 5/4, 5/6, 5/8), and red (2.5YR 4/6) or yellowish red (5YR 4/6). They are silty clay loam to clay. Reaction is strongly acid or very strongly acid in the upper horizons and grades to medium acid below.

Muskogee-McKamie complex, 3 to 8 percent slopes, eroded (MuD2).—These moderately well drained and well drained soils are on narrow escarpments. The Muskogee soil makes up about 60 percent of the acreage, and the McKamie soil 30 percent.

The Muskogee soil is wet for a short period after a rain because permeability is slow. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, and potassium is very low. The soil is very strongly acid. Runoff is rapid. Available water capacity is high.

The well-drained McKamie soil has a dark-gray very fine sandy loam or silt loam surface layer. The subsoil is red clay. Generally, the content of nitrogen, phosphorus, and potassium is very low. The soil is very strongly acid in the surface layer and strongly acid in the subsoil grading to neutral below. Permeability is very slow, and runoff is rapid. Available water capacity is moderate.

Included in mapping are small areas of Acadia soils and less sloping Muskogee soils.

About 85 percent of the acreage is woodland. A small acreage is used for crops and pasture. The supply of moisture available to plants is inadequate during dry periods in some years. The principal limitations are the erosion hazard and low fertility.

Crops and pasture.—These soils are fairly well suited to most crops and pasture plants grown locally. Suited

crops are sweetpotatoes, soybeans, cotton, and truck crops. The principal crop is sweetpotatoes. Suited pasture plants are vetch, ryegrass, bermudagrass, dallisgrass, Pensacola bahiagrass, and white clover. The soils are fairly easy to keep in good tilth, but if plowed when wet, the clay in eroded spots becomes cloddy. If the soils are under intensive cultivation, a plowpan can form.

Where the soil is cultivated, terracing or contour cultivation, stripcropping, rotation with close-growing vegetation, and cover crops are needed to reduce runoff and erosion. Subsoiling and chiseling help to prevent the formation of a plowpan.

Response to fertilizer is good. Lime is needed. Capability unit IVe–1.

Wildife.—There are only a few small open areas. The Muskogee soil is well suited as habitat for dove, quail, rabbit, and other openland wildlife. The McKamie soil is not suited. Grainfields and pasture areas attract these species. The Muskogee soil is well suited and the McKamie soil is suited as habitat for deer, rabbit, squirrel, and other woodland wildlife. Small open areas planted to winter pasture plants provide a good supply of food for deer and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. Neither soil is suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, and sweetgum. Trees suitable for planting are slash and loblolly pines. Potential productivity is moderately high. The site index for loblolly pine is 82. Seedling mortality is slight. Restrictions on the use of equipment are moderate.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Olivier Series

The Olivier series consists of somewhat poorly drained, nearly level soils that have a fragipan. These soils occur as broad areas in the eastern part of the parish.

In a representative profile, the surface layer is brown silt loam 5 inches thick. The subsoil is dark yellowish-brown silty clay loam 7 inches thick. Below this is a dark yellowish-brown and light brownish-gray fragipan.

Olivier soils are associated with Crowley, Patoutville, Calhoun, and Loring soils. They are better drained and have a coarser textured subsoil than Crowley soils. They do not have red mottles, which are typical of Patoutville soils. They are better drained than Calhoun soils and are more poorly drained than Loring soils.

Representative profile of Olivier silt loam, 1 to 3 percent slopes, eroded, about 5 miles northeast of Ville Platte near the center of sec. 22, T. 4 S., R. 3 E.:

Ap—0 to 5 inches, brown (10YR 4/3) silt loam; weak, fine, granular structure; very friable; common fine roots; common, medium, hard, black concretions; slightly acid; abrupt, smooth boundary.

B2t—5 to 12 inches, dark yellowish-brown (10YR 4/4) silty clay loam; few, fine, distinct, yellowish-brown mottles; moderate, medium and fine, subangular blocky structure; friable; common fine roots; many fine pores lined with clay; patchy thin clay films and black stains on ped surfaces; few, fine, soft, red and brown concretions; strongly acid; gradual, wavy boundary.

Btx&A'2—12 to 45 inches, dark yellowish-brown (10YR 3/4) silt loam; light brownish-gray (10YR 6/2) and yellowish-brown (10YR 5/4) silty ped surfaces and mottles; moderate, coarse, prismatic structure parting to moderate, coarse, subangular; firm, slightly brittle; many medium tubular pores inside peds lined with clay films and black stains; patchy thin clay films on horizontal ped surfaces; many, medium, soft, black concretions; medium acid; gradual, wavy boundary.

B3tg—45 to 65 inches, light olive-gray (2.5Y 6/2) silt loam; weak, medium, subangular blocky structure; friable; few fine pores; patchy thin clay films on ped surfaces; common, medium, soft, brown concretions; medium acid.

The A horizon is grayish brown (10YR 5/2), dark grayish brown (10YR 4/2), or brown (10YR 4/3, 5/3) and is 4 to 8 inches thick. The B2t horizon is dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/3, 5/4, 5/6), or brown (7.5YR 4/4, 5/4). It ranges from silt loam to silty clay loam. Grayish mottles occur in the lower part of the B2t or in the fragipan. The Btx and A'2 horizons are dark yellowish brown (10YR 3/4), yellowish brown (10YR 5/4, 5/6), or brown (10YR 4/3, 5/3) and have grayish-brown or light brownish-gray silty ped faces. They are silt loam or silty clay loam. The A horizon is slightly acid to medium acid, and the B horizon is medium acid to strongly acid.

Olivier silt loam, 1 to 3 percent slopes, eroded (OlB2).—This soil occurs as broad areas in the eastern part of the parish. It is saturated for an extended period after a rain because permeability is slow in the fragipan. This soil has the profile described as representative for the series. Generally, the content of nitrogen is very low, and the phosphorus and potassium content is low. The surface layer is slightly acid, and the subsoil is strongly acid to medium acid. Runoff is medium. Available water capacity is high.

Included in mapping are small areas of Calhoun, Patoutville, and Crowley soils.

Most of the acreage is cropland and pasture. The soil is slightly wet in winter and spring, but lacks adequate moisture for plants during dry periods late in summer and in fall in some years. The principal limitations are wetness and the erosion hazard.

Crops and pasture.—The soil is well suited to most crops and pasture plants grown locally. Sweetpotatoes is the principal crop. Other well suited crops are cotton, corn, soybeans, and truck crops. Suited pasture plants are common bermudagrass, bahiagrass, ryegrass, dallisgrass, white clover, millet, and vetch. The soil is easy to work and to keep in good tilth. If it is under continuous cultivation, a plowpan is likely to form.

Where row crops are grown, proper row direction is needed. Contour cultivation helps to prevent erosion and conserve moisture. Subsoiling and chiseling prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIw–1.

Wildlife.—This soil is suitable habitat for dove, quail, rabbit, and other openland wildlife. Planting winter pasture plants on the edges of fields bordering wooded areas provides a good supply of food for deer and rabbit. The

soil is suitable habitat for squirrel, deer, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is also suitable habitat for ducks, geese, snipe, crawfish, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is very high. The site index for loblolly pine is 99. Seedling mortality is slight, and restrictions on the use of equipment are moderate because of slight wetness.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Patoutville Series

The Patoutville series consists of somewhat poorly drained, nearly level to gently sloping soils that are slowly permeable. These soils are in broad areas at the higher elevations in the eastern and southeastern parts of the parish.

In a representative profile, the surface layer is grayish-brown silt loam 7 inches thick. The subsoil is dark grayish-brown silty clay loam mottled with red and yellowish brown. Below a depth of 40 inches, it is mottled gray silt loam.

Patoutville soils are associated with Olivier, Crowley, Mowata, and Jeanerette soils. They do not have a fragipan, which is typical of Olivier soils. They are better drained than Crowley and Mowata soils and do not have the fine-textured subsoil that is typical of those soils. They are better drained than Jeanerette soils and are not so dark colored.

Representative profile of Patoutville silt loam, in an area of Patoutville-Crowley complex, about 4 miles east of Ville Platte, 300 feet north of road in the south-central part of sec. 59, T. 4 S., R. 3 E.:

Ap—0 to 7 inches, grayish-brown (10YR 5/2) silt loam; weak, fine, granular structure; very friable; common fine roots; few, fine, soft, black concretions; medium acid; abrupt, wavy boundary.

B21t—7 to 20 inches, dark grayish-brown (10YR 4/2) silty clay loam; common, fine, prominent, red mottles and many, medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, prismatic structure parting to moderate, medium, subangular blocky; firm; few fine roots between peds; few fine pores lined with clay; continuous, thick, dark clay films on ped surfaces; common, medium, soft, brown concretions; strongly acid; gradual, wavy boundary.

B22tg—20 to 40 inches, gray (10YR 5/1) silty clay loam; many, medium, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots; few fine pores lined with clay; continuous thick clay films on ped surfaces; few, medium, soft, brown concretions; medium acid; gradual, wavy boundary.

B3t—40 to 57 inches, gray (10YR 6/1) silt loam; common, coarse, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; friable; few fine pores lined with clay; patchy thin films on ped surfaces; few, medium, soft, brown concretions; neutral.

The A horizon is dark grayish brown (10YR 4/2) or grayish brown (10YR 5/2) and ranges from 4 to 9 inches in thickness. The upper part of the Bt horizon is dark grayish brown (10YR 4/2), gray (10YR 5/1), or brown (10YR 4/3, 5/3) mottled with red, yellowish brown, and gray. It ranges from silt loam to silty clay loam. The lower part of the Bt horizon is gray (10YR 5/1, 6/1) and has many yellowish-brown mottles. It is silt loam or silty clay loam. The A horizon is medium acid, and the B horizon is strongly acid to neutral.

Patoutville silt loam, 1 to 3 percent slopes, eroded (PaB2).—This soil is in narrow areas along streams in the eastern part of the parish. It is wet for extended periods because permeability is slow in the subsoil. The surface layer is grayish-brown silt loam, and the subsoil is dark grayish-brown light silty clay loam mottled with red and yellowish brown. Generally, the content of nitrogen is very low, and the content of phosphorus and potassium is low. The surface layer is medium acid, and the layers beneath are strongly acid to medium acid. Runoff is medium. Available water capacity is high.

Included in mapping are small areas of Olivier and Crowley soils.

Almost all the acreage is used for crops and pasture. The soil is wet in winter and spring, but lacks adequate moisture during dry periods in some years. The principal limitations are low fertility, wetness, and the erosion hazard.

Crops and pasture.—This soil is well suited to most crops and pasture plants grown locally. Suitable crops are sweetpotatoes, cotton, soybeans, corn, and truck crops. The main crop is sweetpotatoes. Suitable pasture plants are common bermudagrass, dallisgrass, Pensacola bahiagrass, ryegrass, millet, white clover, and vetch.

It is fairly easy to keep this soil in good tilth, but if it is cultivated continuously a plowpan is likely to form. Where row crops are grown, proper row direction helps to prevent erosion and conserve moisture. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIw–1.

Wildlife.—This soil is suited to management as habitat for dove, quail, rabbit, and other openland wildlife. Grain crops attract these species. The soil is not suitable habitat for woodland wildlife because there are no native trees. It is suitable habitat for crawfish, ducks, geese, snipe, and other wetland wildlife.

Woodland.—Species of trees suitable for commercial planting are slash and loblolly pines. Potential productivity is very high. The site index is 99 for loblolly pine. Seedling mortality is slight. Restrictions on the use of equipment are moderate because of wetness.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicgrass, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Patoutville-Crowley complex (Pc).—These somewhat poorly drained to poorly drained, nearly level soils are in broad, slightly convex areas in the southeastern part of the parish. The Patoutville soil makes up about 60 percent of this complex, and the Crowley soil 30 percent.

The Patoutville soil is on broad, low ridges and mounds. It has the profile described as representative for the series. This soil is wet for extended periods because permeability is slow in the subsoil. Generally, the content of nitrogen is very low, and the phosphorus and potassium content is low. The surface layer is medium acid, and the underlying layers are strongly acid to medium acid. Runoff is medium. Available water capacity is high.

The Crowley soil is in small depressions on broad, low ridges. It is wet for extended periods because runoff is slow and permeability is very slow in the clayey subsoil. The surface layer is thick, dark grayish-brown silt loam. The subsoil is dark-gray or gray silty clay mottled with red. Generally, the content of nitrogen and phosphorus is very low, and the potassium content is low. The soil is strongly acid in the surface layer and grades to neutral in the lower part of the subsoil.

Included in mapping are small areas of Olivier, Mowata, and Jeanerette soils.

Most of the acreage is used for crops and pasture. The soils are saturated in winter and early in spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are well suited to most crops and pasture plants grown locally. Suitable crops are rice, sweetpotatoes, cotton, soybeans, and truck crops. Rice and sweetpotatoes are the principal crops. Suitable pasture plants are dallisgrass, common bermudagrass, Pensacola bahiagrass, ryegrass, millet, white clover, and vetch.

These soils are well suited to flood irrigation. They are fairly easy to keep in good tilth, but a plowpan is likely to form if they are cultivated continuously. Land smoothing and leveling increase the efficiency of flood irrigation and improve drainage. Where row crops are grown, proper row direction is needed to improve drainage. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Capability unit IIw–3.

Wildlife.—Most of the acreage is openland. The Patoutville soil is suited as habitat for dove, quail, rabbit, and other openland wildlife, and the Crowley soil is poorly suited. Grain crops attract openland wildlife. These soils are not suitable habitat for woodland wildlife because there are no native trees. They are well suited as habitat for crawfish, ducks, geese, snipe, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are loblolly and slash pine. Potential productivity is very high on the Patoutville soil and high on the Crowley soil. The site index for loblolly pine is 99 on the Patoutville soil and 93 on the Crowley soil. Seedling mortality is slight on the Patoutville soil and moderate on the Crowley soil. Because of wetness, restrictions on the use of equipment are moderate on the Patoutville soil and severe on the Crowley soil.

Properly managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniolas, sedges, rushes, low panicgrass, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Perry Series

The Perry series consists of poorly drained soils that are clayey throughout the profile. They occur on broad, slightly concave areas at lower elevations in the northeastern part of the parish.

In a representative profile, the surface layer is gray clay 33 inches thick. It is underlain by reddish-brown clay.

Perry soils are associated with Moreland, Latanier, and Gallion soils. They are more poorly drained than Moreland soils. They are more poorly drained and have a finer textured subsoil than Latanier soils. They are more poorly drained and finer textured than Gallion soils.

Representative profile of Perry clay, frequently flooded, about 14 miles north of Ville Platte, 500 feet north of road near a swamp in sec. 1, T. 2 S., R. 1 E.:

A1—0 to 3 inches, gray (5Y 5/1) clay; many, fine, prominent yellowish-red mottles; moderate, medium, angular blocky structure; firm, many fine and medium roots; strongly acid; clear, wavy boundary.

B1g—3 to 33 inches, gray (10YR 5/1) clay; common, medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm; common medium roots; few, patchy, black stains on ped surfaces; shiny ped faces; few slickensides; common, medium, hard, black concretions; medium acid; gradual, wavy boundary.

C—33 to 60 inches, reddish-brown (5YR 4/4) clay; common, medium, prominent, gray (10YR 5/1) mottles in the upper part; moderate, fine, subangular blocky structure; firm; few, patchy, black stains on ped surfaces; many, fine, shiny ped surfaces; many, fine, soft, black accretions; moderately alkaline, calcareous.

The A1 horizon is gray (5Y 5/1; 10YR 5/1) and is 1 to 6 inches thick. The Bg horizon is gray (5Y 5/1; 10YR 5/1) clay mottled with yellowish brown, strong brown, or reddish brown. The C horizon is reddish-brown (5YR 4/4), yellowish-red (5YR 4/6), or dark-red (2.5YR 3/6) clay mottled with gray in the upper part. In places the C horizon is stratified with loam and clay. The A horizon is strongly acid to medium acid. The Bg horizon is strongly acid to neutral. The C horizon is neutral to moderately alkaline or calcareous.

Perry clay, frequently flooded (Pe).—This clayey soil is in depressions and rim swamps at lower elevations in the northeastern part of the parish. It is frequently flooded and remains wet for extended periods. Water accumulates on the surface because permeability is very slow. This soil has the profile described as representative for the series. The surface layer is strongly acid. The subsoil is medium acid in the upper part and moderately alkaline in the lower part. Runoff is very slow. Available water capacity is moderate. Large areas are flooded for long periods in most years.

Included in mapping are small areas of Moreland, Latanier, and Gallion soils; small areas of peats and mucks; and areas of gray, acid clays.

Most of the acreage is woodland. A small acreage is used for pasture. Even though shallow flooding generally occurs throughout the year the supply of moisture available to plants is inadequate during dry periods. The principal limitations are frequent flooding, wetness, and poor tilth.

Crops and pasture.—Flooding on this soil is usually too severe for the production of crops. Small areas have been cleared for pasture. Common bermudagrass is a suitable pasture plant that tolerates flooding fairly well. Pasture plants respond well to nitrogen fertilizer. Capability unit Vw–4.

Wildlife.—This soil is not suitable habitat for openland wildlife, and it is poor habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is well suited as habitat for ducks, crawfish, and other wetland wildlife.

Woodland.—The principal trees are sweetgum, green ash, water oak, tupelo-gum, and baldcypress. Trees suitable for commercial planting are cottonwood and sycamore. Potential productivity is high. The site index for sweetgum is 92, green ash 72, and water oak 82. Seedling mortality is moderate, and restrictions on the use of equipment are severe because of wetness and flooding. Wooded areas should not be grazed.

Ruston Series

The Ruston series consists of well-drained soils that have a reddish, loamy subsoil. These soils are on small, round hills and hillsides along major drainageways in the northwestern part of the parish.

In a representative profile, the surface layer is dark grayish-brown fine sandy loam 8 inches thick. The next layer is yellowish-brown fine sandy loam 7 inches thick. The subsoil is yellowish-red sandy clay loam that grades to reddish brown at a depth of 36 inches.

Ruston soils are associated with Kenney, Savannah, and Glenmora soils. They are not so sandy as Kenney soils. They are better drained than Savannah and Glenmora soils and do not have a fragipan, which is typical of Savannah soils.

Representative profile of Ruston fine sandy loam, 5 to 8 percent slopes, about 4 miles southwest of Pine Prairie in SE¼NW¼ sec. 29, T. 3 S., R. 1 W.:

A1—0 to 8 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; gradual, wavy boundary.

A2—8 to 15 inches, yellowish-brown (10YR 5/4) fine sandy loam; moderate, medium, granular structure; friable; common fine roots; common fine pores; strongly acid; gradual, wavy boundary.

B2t—15 to 36 inches, yellowish-red (5YR 4/8) sandy clay loam; moderate, medium, subangular blocky structure; firm; few fine roots; common fine pores lined with clay; continuous thick clay films on ped surfaces; sand grains coated and bridged with clay films; very strongly acid.

B3t—36 to 56 inches, reddish-brown (5YR 5/4) sandy clay; moderate, medium, subangular blocky structure; firm; few fine pores lined with clay; patchy thin clay films on ped surfaces; red (2.5YR 4/8) ped interiors; sand grains coated and bridged with dark-red (2.5Y 3/6) clay films; very strongly acid.

Bt&A'2—56 to 83 inches, yellowish-red (5YR 4/8) sandy clay loam; moderate, coarse, subangular blocky structure; friable; few fine pores; patchy thin clay films on horizontal ped faces; thick light yellowish-brown (10YR 6/4) very fine sand coats on vertical ped surfaces; very strongly acid; gradual, wavy boundary.

B't—83 to 96 inches, light-gray (10YR 7/1) sandy clay; common, coarse, prominent, red (2.5YR 4/8) mottles; moderate, coarse, prismatic structure; firm; very strongly acid.

The A1 horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3) and ranges from 4 to 15 inches thick. The A2 horizon is brown (10YR 5/3), yellowish brown (10YR 5/4), light yellowish brown (10YR 6/4), or yellowish red (5YR 4/8, 5/8) and is 3 to 8 inches thick. The Bt horizon is yellowish red (5YR 4/6, 4/8, 5/6). It has some clay films on dark-red (2.5YR 3/6) and red (2.5YR 4/8) ped surfaces. The soil is strongly acid to very strongly acid throughout the profile.

Ruston fine sandy loam, 1 to 5 percent slopes (RuC).—This is a well-drained soil that has a reddish subsoil. It occurs on small hills and hillsides along drainageways in the northwestern part of the parish. The surface layer is dark grayish-brown fine sandy loam. The subsoil is yellowish-red sandy clay loam. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is strongly acid, and the subsoil is very strongly acid. Permeability is moderate, and runoff is medium. Available water capacity is moderate.

Included in mapping are small areas of Savannah and Glenmora soils.

About 90 percent of the acreage is wooded. A small acreage is used for crops and pasture. The supply of moisture available to plants is inadequate during dry periods late in summer and in fall in most years. The principal limitations are low fertility and the erosion hazard.

Crops and pasture.—The soil is moderately well suited to a few crops grown locally and to most pasture plants. Suited crops are cotton, soybeans, small grains, and truck crops. Suited pasture plants are common and Coastal bermudagrasses. Pensacola bahiagrass, ryegrass, dallisgrass, millet, white clover, crimson clover, and vetch. The soil is easy to keep in good tilth, but if it is cultivated to the same depth each year, a plowpan is likely to form.

If the soil is clean tilled, terracing or contour cultivation is needed to control runoff, reduce erosion, and conserve moisture. Subsoiling and chiseling help prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed. Capability unit IIe–3.

Wildlife.—This soil is well suited as habitat for dove, quail, rabbit, and other openland wildlife. Grain crops attract these species. Small open areas planted to winter pasture provide a good supply of food for deer and rabbit. The soil is suitable woodland habitat for deer, squirrel, and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly and longleaf pines. Trees suited for commercial planting are loblolly and slash pines. Potential productivity is high.

The site index for loblolly pine is 90. Seedling mortality and restrictions on the use of equipment are slight.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, slender bluestem, cutover muhly, uniola, low panicums, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, leaving the uniolas and low panicums. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,200 pounds air-dry weight.

Ruston fine sandy loam, 5 to 8 percent slopes (RuD).—This is a well-drained soil that has a reddish subsoil. It occurs along drainageways in the northwestern part of the parish. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is strongly acid, and the subsoil is very strongly acid. Permeability is moderate, and runoff is medium to rapid. Available water capacity is moderate.

Included in mapping are small areas of Kenney and Glenmora soils.

About 90 percent of the acreage is wooded. A small acreage is used for crops and pasture. The supply of soil moisture available to plants is inadequate during dry periods late in summer and in fall of most years. The principal limitations are the erosion hazard and low fertility.

Crops and pasture.—The soil is moderately well suited to most crops and pasture plants grown locally. Suited crops are cotton, soybeans, small grains, and truck crops. Suited pasture plants are common bermudagrass, Coastal bermudagrass, Pensacola bahiagrass, ryegrass, dallisgrass, millet, white clover, crimson clover, and vetch. It is easy to keep this soil in good tilth, but if it is cultivated to the same depth each year, a plowpan is likely to form.

If the soil is clean tilled, terracing or contour cultivation is needed to control runoff, reduce erosion, and conserve moisture. Subsoiling and chiseling help to prevent the formation of a plowpan Response to fertilizer is good. Lime is needed. Capability unit IIIe–3.

Wildlife.—This soil is well suited as habitat for dove, quail, rabbit, and other openland wildlife. Grain crops attract these species. Small open areas planted to winter pasture provide a good supply of food for deer and rabbit. The soil is suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly and longleaf pines. Trees suitable for commercial planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 90. Seedling mortality and restrictions on the use of equipment are slight.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, slender bluestem, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,200 pounds air-dry weight.

Savannah Series

The Savannah series consists of moderately well drained, nearly level soils that have a fragipan. These soils are in long, narrow areas along small drainageways in the northwestern part of the parish.

In a representative profile, the surface layer is dark grayish-brown very fine sandy loam 7 inches thick. The subsoil is yellowish-brown sandy clay loam. The fragipan is at a depth of 34 inches. It is mottled gray, red, and brown.

Savannah soils are associated with Ruston and Glenmora soils. They differ from Ruston soils in having a fragipan and in being more poorly drained. They are better drained than Glenmora soils.

Representative profile of Savannah very fine sandy loam, 1 to 3 percent slopes, about 9 miles northwest of Pine Prairie in NW¼SW¼ sec. 26, T. 2 S., R. 2 W.:

A1—0 to 7 inches, dark grayish-brown (10YR 4/2) very fine sandy loam; common, medium, distinct, yellowish-brown (10YR 5/4) mottles; weak, fine, granular structure; friable; common fine roots; few fine pores; few, fine, hard, black and brown concretions; strongly acid; gradual, wavy boundary.

B21t—7 to 20 inches, yellowish-brown (10YR 5/8) sandy clay loam; common, prominent, yellowish-red (5YR 5/8) mottles; weak, medium, subangular blocky structure; friable; few fine roots; few fine pores; patchy thin clay films on ped surfaces; common, fine, hard, brown concretions; very strongly acid; gradual, wavy boundary.

B22t—20 to 34 inches, mottled pale-brown (10YR 6/3) and yellowish-red (5YR 5/6) sandy clay loam; moderate, medium, subangular blocky structure; firm; few fine roots; common fine pores lined with clay; patchy thin clay films on horizontal ped surfaces; continuous thin very fine sand coats along vertical ped surfaces; very strongly acid; gradual, wavy boundary.

Bx—34 to 85 inches, mottled light brownish-gray (10YR 6/2), yellowish-red (5YR 4/8), and yellowish-brown (10YR 5/8) sandy clay loam; moderate, coarse, prismatic structure parting to moderate, coarse, subangular blocky; firm, brittle; few fine roots along vertical ped faces; common medium tubular pores lined with clay films inside peds; patchy thin clay films on horizontal ped faces; continuous thick very fine sand coats along vertical ped faces; common, medium, hard, black concretions; common, medium, faint gray (10YR 6/1) and prominent red (2.5YR 4/8) mottles in the low part of horizon; very strongly acid; diffuse, broken boundary.

C—85 to 100 inches, mottled light yellowish-brown (10YR 6/4) and gray (10YR 6/1) sandy loam; massive; friable; very strongly acid.

The A horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3), and it ranges from 4 to 12 inches in thickness. The Bt horizon is pale brown (10YR 6/3), yellowish brown (10YR 5/4, 5/6, 5/8), brown (7.5YR 5/4, 4/4), or strong brown (7.5YR 5/6, 5/8) mottled with red. The Bx horizon is mottled gray, brownish gray, yellowish brown, and yellowish red. It is sandy clay loam. The A horizon is strongly acid, and the B horizon is very strongly acid.

Savannah very fine sandy loam, 1 to 3 percent slopes (SaB).—This soil is along small drainageways in the north-

western part of the parish. It is wet for a short period after a rain because permeability is moderately slow in the fragipan. This soil has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The surface layer is strongly acid, and the subsoil is very strongly acid. Runoff is medium. Available water capacity is moderate.

Included in mapping are small areas of Glenmora and Ruston soils.

About 8 percent of the acreage is woodland. A small acreage is used for crops and pasture. Soil moisture is inadequate during dry periods late in summer and in fall of some years. The principal limitations are low fertility and the erosion hazard.

Crops and pasture.—The soil is moderately well suited to most crops and pasture plants grown locally. Suited crops are cotton, soybeans, small grain, and truck crops. Suited pasture plants are common bermudagrass, Coastal bermudagrass, Pensacola bahiagrass, ryegrass, dallisgrass, millet, white clover, crimson clover, and vetch. It is easy to keep this soil in good tilth, but if it is cultivated to the same depth each year, a plowpan is likely to form.

If the soil is clean tilled, terracing or contour cultivation is needed to control runoff, to reduce the hazard of erosion, and to conserve moisture. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed. Capability unit IIe–4.

Wildlife.—This soil is well suited as habitat for dove, quail, rabbit, and other openland wildlife. Grain crops attract these species. Small open areas planted to winter pasture provide a good supply of food for deer and rabbit. The soil is suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The soil is not suitable habitat for wetland wildlife.

Woodland.—The principal trees are loblolly and longleaf pines. Trees suitable for commercial planting are loblolly and slash pines. Potential productivity is high. The site index for loblolly pine is 88. Seedling mortality is slight, and equipment restrictions are slight.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, purpletop, cutover muhly, uniola, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,300 pounds air-dry weight.

Tenot Series

The Tenot series consists of nearly level, somewhat poorly drained soils that are loamy throughout the profile. These soils occur in broad areas in the north-central part of the parish.

In a representative profile, the surface layer is grayish-brown silt loam 6 inches thick. The subsurface layer is light yellowish-brown silt loam 7 inches thick. The subsoil is dark grayish-brown and red silty clay loam grading to yellowish brown at a depth of about 38 inches.

Tenot soils are associated with the Calhoun, Duralde, Frost, and Evangeline soils. They are better drained than the Calhoun and Frost soils and more poorly drained than the Evangeline soils. Tenot soils have more gray mottles in the upper part of the subsoil than the Duralde soils.

Representative profile of Tenot silt loam, 1 to 3 percent slopes, about 2 miles north of Pine Prairie, 300 feet east of farmstead, 90 feet north of abandoned land, sec. 12, T. 3 S., R. 1 W.:

Ap—0 to 6 inches, grayish-brown (10YR 5/2) silt loam; few, fine, faint, gray mottles; weak, fine, granular structure; very friable; common fine roots; few, fine, soft, brown concretions; medium acid; clear, smooth boundary.

A2—6 to 13 inches, light yellowish-brown (10YR 6/4) silt loam; common, medium, faint, light brownish-gray (10YR 6/2) mottles; weak, fine, subangular blocky structure; friable; few fine roots; common fine pores lined with white silt; common, medium, soft, brown concretions; strongly acid; abrupt, smooth boundary.

B21tg—13 to 24 inches, mottled dark grayish-brown (10YR 4/2) and red (2.5YR 4/6) silty clay loam; moderate, coarse, prismatic structure parting to moderate, medium, subangular blocky; firm; dark grayish-brown (10YR 4/2) ped surfaces; few fine roots along ped surfaces; few fine pores lined with clay; continuous thick clay films on ped surfaces; thin pale-brown (10YR 6/3) silt coats on major vertical ped surfaces in the upper 4 inches; common, medium, soft, black concretions; strongly acid; gradual, wavy boundary.

B22t—24 to 38 inches, mottled strong-brown (7.5YR 5/6), yellowish-brown (10YR 5/8), and yellowish-red (5YR 5/8) silty clay loam; few, fine, distinct, grayish-brown mottles; moderate, medium, subangular blocky structure; firm; few fine roots; few fine pores; patchy thin clay films and black stains on ped surfaces; thin silt coats on vertical ped surfaces; medium acid; gradual, wavy boundary.

B31t—38 to 63 inches, yellowish-brown (10YR 5/8) silty clay loam; few, fine, distinct, light brownish-gray mottles and few, medium, distinct, olive-yellow (2.5Y 6/6) mottles; moderate, medium, subangular blocky structure; friable; few fine pores; patchy thin clay films on ped surfaces; few, fine, soft, red and black concretions; slightly acid; gradual, wavy boundary.

B32—63 to 78 inches, mottled pale-brown (10YR 6/3) and yellowish-brown (10YR 5/6) silt loam; few, fine, faint, gray mottles and few, medium, prominent, red (2.5YR 4/8) mottles; weak, medium, subangular blocky structure; friable; few fine pores; patchy thin clay films on ped surfaces; thin silt coats on vertical ped faces; neutral.

The Ap horizon is dark gray (10YR 4/1), dark grayish brown (10YR 4/2), gray (10YR 5/1), or grayish brown (10YR 5/2) and is about 6 inches thick. The A2 horizon is pale brown (10YR 6/3), light yellowish brown (10YR 6/4), brown (10YR 5/3), or yellowish brown (10YR 5/4, 5/6). The boundary between the A2 and Btg horizons is abrupt and smooth and is as much as 10 percent interfingering. Ped surfaces in the Btg horizon are dark gray (10YR 4/1), dark grayish brown (10YR 4/2), gray (10YR 5/1), or grayish brown (10YR 5/2). Ped interiors are 40 to 70 percent mottles of red (2.5YR 4/6, 4/8) or yellowish red (5YR 4/6, 5/6, 4/8, 5/8). The Btg horizon is silty clay loam. The lower part of the Bt horizon is brown (10YR 5/3), pale brown (10YR 6/3), yellowish brown (10YR 5/4, 5/6, 5/8), or strong brown (7.5YR 5/6, 5/8) with gray and red mottles. It ranges from silty clay loam to silt loam. Reaction is slightly acid to strongly acid in the A horizon, strongly acid in the Btg horizon, and grades to neutral below.

Tenot silt loam, 1 to 3 percent slopes (TeB).—This somewhat poorly drained soil is in broad areas adjacent to streams in the north-central part of the parish. It has the profile described as representative for the series. Generally, the content of nitrogen, phosphorus, potassium, and calcium is low. This soil is medium acid in the surface layer, is strongly acid in the subsoil, and grades to neutral with increasing depth. Permeability is slow. Runoff is medium, and available water capacity is high.

Included in mapping are small areas of Calhoun, Duralde, and Evangeline soils.

Most of the acreage is used for crops and pasture. The soil is saturated for short periods during winter and spring, but lacks adequate moisture for plants during dry periods in some years. The principal limitations are low fertility, the erosion hazard, and wetness.

Crops and pasture.—This soil is well suited to most crops and pasture plants grown locally. Suitable crops are sweetpotatoes, soybeans, corn, cotton, and truck crops. Cotton and sweetpotatoes are the principal crops. Suitable pasture plants are Pensacola bahiagrass, dallisgrass, bermudagrass, ryegrass, white clover, and vetch. The soil is fairly easy to work and to keep in good tilth. A crust forms after a rain, and if the soil is under continuous cultivation, a plowpan is likely to form.

Where row crops are grown, proper row direction is needed to control erosion and conserve moisture. Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed. Capability unit IIw–1.

Wildlife.—Open areas are extensive. The soil is suitable habitat for quail, dove, rabbit, and other openland wildlife. Grain crops attract these species The soil is not suitable habitat for woodland wildlife because there are no native trees. It is suitable habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is high. The site index for loblolly pines is 90. Seedling mortality is slight. Restrictions on the use of equipment are moderate because of wetness in winter and spring.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the uniolas, rushes, sedges, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Tenot-Calhoun complex (Th).—These nearly level, somewhat poorly drained and poorly drained soils occupy broad areas in the north-central part of the parish. Tenot soils make up about 40 percent of the acreage, and Calhoun soils 35 percent.

The somewhat poorly drained Tenot soils have a grayish-brown silt loam surface layer, a light yellowish-brown silt loam subsurface layer, and a grayish silty clay loam subsoil mottled with red, strong brown, and yellowish brown. Generally the content of nitrogen, phosphorus, potassium, and calcium is low. The soil is medium acid to strongly acid in the surface layer, strongly acid in the subsoil, and grades to neutral with increasing depth. Permeability is slow, and surface runoff is slow. Available water capacity is high.

The poorly drained Calhoun soils have a thick, gray silt loam surface layer and a gray silty clay loam subsoil mottled with yellowish brown. Generally, the content of nitrogen, phosphorus, potassium, and calcium is very low. The soils are medium acid to strongly acid at the surface, very strongly acid in the subsoil, and grade to neutral below. Permeability is slow, and runoff is slow to very slow. Available water capacity is high.

Included in mapping are fairly large areas of Duralde soils and small areas of Frost soils.

Most of the acreage is used for crops and pasture. The soils are saturated in winter and early in spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are moderately well suited to most crops and pasture plants grown locally. Suitable crops are sweetpotatoes, soybeans, cotton, and truck crops. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch. The soils are easy to work and to keep in good tilth, but a crust forms after heavy rain and if the soil is under continuous cultivation, a plowpan is likely to form.

Where row crops are grown, land smoothing and proper row direction are needed to improve drainage. Tilth can be improved by adding organic matter from crop residue or by growing grasses and legumes in rotation with other crops. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed. Capability unit IIIw–3.

Wildlife.—Open areas are extensive, but the soils are poorly suited as habitat for quail, dove, rabbit, and other openland wildlife. Grain crops attract these species. These soils are not suitable habitat for woodland wildlife because there are no native trees. They are well suited as habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—Trees suitable for commercial planting are slash and loblolly pines. Potential productivity is moderately high on the Tenot soil and very high on the Calhoun soil. The site index for loblolly pine is 90 for the Tenot soil and 98 for the Calhoun soil. Seedling mortality is slight on the Tenot soil and moderate on the Calhoun soil. Restrictions on the use of equipment are moderate on the Tenot soil and severe on the Calhoun soil because of wetness in winter and spring.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniola, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums remain. Potential forage production per acre on woodland in excellent conditon under a medium canopy is about 1,800 pounds air-dry weight.

Vidrine Series

The Vidrine series consists of somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil. Typically, these soils occupy small mounds.

In a representative profile, the surface layer is dark grayish-brown silt loam 3 inches thick, and the subsurface layer is very pale brown silt loam 3 inches thick. The subsoil to a depth of 27 inches is mainly yellowish-brown silt loam. Below this, it is mottled grayish-brown and yellowish-brown silty clay.

The Vidrine soils in Evangeline Parish are mapped only with Crowley and Wrightsville soils. They are better drained and are yellower in the upper part of the subsoil than those soils.

Representative profile of Vidrine silt loam in an area of Wrightsville-Vidrine complex, about 8 miles west of Mamou on the east side of SE¼NE¼ sec. 15, T. 5 S., R. 2 W.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) silt loam; few, fine, dark-brown mottles; weak, fine, granular structure; friable; many fine roots; few fine pores; few, fine, soft, black concretions; strongly acid; clear, wavy boundary.

A2—3 to 6 inches, very pale brown (10YR 7/3) silt loam; common, fine, distinct, strong-brown mottles; weak, fine, granular structure; friable; many fine roots; few fine pores; common, medium, soft, brown concretions; strongly acid; clear, irregular boundary.

B1—6 to 24 inches, yellowish-brown (10YR 5/4) silt loam; common, medium, pale-brown (10YR 6/3), vertical streaks in upper part of horizon; weak, coarse, subangular blocky structure; firm; common fine roots; few fine pores; common, fine, hard, brown concretions; very strongly acid; abrupt, wavy boundary.

Bt&A'2—24 to 27 inches, brownish-yellow (10YR 6/6) silty clay loam; pale-brown (10YR 6/3) silt ped coats and ped interiors; common, fine, prominent, red mottles; moderate, medium, subangular blocky structure; firm; many, medium, hard, brown concretions; very strongly acid; clear, wavy boundary.

B21tg—27 to 46 inches, mottled grayish-brown (10YR 5/2) and yellowish-brown (10YR 5/4) silty clay; many, medium, prominent, red (2.5YR 4/6) mottles; weak, coarse, prismatic structure parting to moderate, medium, subangular and fine angular blocky; very firm; few fine pores; grayish-brown (10YR 5/2) thin silt coats on vertical ped surfaces in upper part; continuous thick clay films on ped surfaces; strongly acid; gradual, wavy boundary.

B22t—46 to 54 inches, pale-brown (10YR 6/3) silty clay loam; common, medium, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; firm; patchy thin clay films on ped surfaces; thin silt coats on vertical ped surfaces; slightly acid; gradual, wavy boundary.

B3—54 to 72 inches, light-gray (10YR 6/1) silt loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; firm; patchy thin clay films on ped surfaces; thin silt coats on vertical ped surfaces; neutral.

The A1 horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or brown (10YR 4/3, 5/3) and is 2 to 6 inches thick. The A2 horizon is pale brown (10YR 6/3), very pale brown (10YR 7/3), or light yellowish brown (10YR 6/4). The B1 horizon is brown (10YR 5/3), yellowish brown (10YR 5/4, 5/6), pale brown (10YR 6/3), or light yellowish brown (10YR 6/4). Interfingering of an A'2 horizon into the Bt horizon is typical. The Btg horizon is dark gray (10YR 4/1), gray (10YR 5/1, 6/1), dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or light brownish gray (10YR 6/2). Texture is silty clay loam to clay. Mottles in the Bt horizon are red and yellowish brown. The A horizon is strongly acid, and the B horizon is very strongly acid to neutral.

Wrightsville Series

The Wrightsville series consists of level to nearly level, poorly drained, very slowly permeable soils. These soils are in broad, wooded areas and drainageways in the southern half of the parish.

In a representative profile, the surface layer is gray silt loam 3 inches thick. The subsurface layer is light-gray silt loam 15 inches thick. The upper part of the subsoil is light olive-gray silty clay. The lower part is gray silty clay loam.

Wrightsville soils are associated with Acadia, Crowley, Mowata, and Vidrine soils. They are more poorly drained and grayer than Acadia and Vidrine soils. Compared with Crowley and Mowata soils, they do not have dark-colored ped surfaces. Also, they do not have red mottles, which are typical of Crowley soils.

Representative profile of Wrightsville silt loam in an area of Wrightsville-Vidrine complex, about 4 miles southwest of Ville Platte, 1,000 feet south of the road, and 200 feet west of Bayou des Cannes in sec. 45, T. 4 S., R. 1 E.:

Ap1—0 to 3 inches, gray (10YR 5/1) silt loam; weak, fine, granular structure; friable; many fine roots; few, fine, soft, brown concretions; strongly acid; abrupt, wavy boundary.

Ap2—3 to 8 inches, light-gray (10YR 6/1) silt loam; weak, medium, platy structure; firm; common fine roots; common fine pores; few, fine, soft, dark-brown concretions; few, patchy, very dark grayish-brown (10YR 3/2) stains on ped surfaces; strongly acid; gradual, wavy boundary.

A2g—8 to 18 inches, light-gray (10YR 7/2) silt loam; few, medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; many fine pores; few fine roots; common, fine, soft, black concretions; very strongly acid; abrupt, irregular boundary; tongues extend to a depth of 29 inches.

B21tg—18 to 29 inches, light olive-gray (5Y 6/2) silty clay; common, medium, prominent, yellowish-brown (10YR 5/8) mottles; weak, fine, angular blocky structure; firm; patchy thin clay films on ped surfaces; few fine roots; common fine pores; common, medium, soft, black and brown concretions; very strongly acid; gradual, wavy boundary.

B22tg—29 to 39 inches, light olive-gray (5Y 6/2) silty clay; common, medium, prominent, yellowish-brown (10YR 5/8) mottles; compound, medium and coarse, prismatic structure breaking to moderate, medium, subangular blocky; firm; few fine roots between peds; patchy thin clay films on horizontal ped surfaces and in pores; thin silt coats on ped surfaces; common, medium, black and brown, hard concretions; strongly acid; gradual, wavy boundary.

B23tg—39 to 46 inches, gray (10YR 5/1) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/8) mottles; compound, moderate, coarse, prismatic structure breaking to moderate, medium, subangular blocky; common fine pores; firm; few fine roots between peds; patchy thin clay films on vertical ped surfaces; continuous thick clay films on horizontal ped surfaces; few gray (10YR 5/1) silt coats on vertical ped surfaces; common, medium, hard, black concretions; neutral; gradual, wavy boundary.

B3tg—46 to 65 inches, gray (5Y 6/1) silty clay loam; common, medium, prominent, strong-brown (7.5YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; few fine roots between peds; contin-

uous thin clay films on ped surfaces; few thin silt coats on vertical ped surfaces; few, medium, hard carbonate concretions at a depth of 50 inches; few, medium, hard, black concretions; moderately alkaline.

The Ap horizon is dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), or gray (10YR 5/1, 6/1). The A2g horizon is light gray (10YR 6/1, 7/1, 7/2) mottled with yellowish brown. Tongues of the A2g horizon extend well into the Btg horizon. The Btg horizon is gray (10YR 6/1, 5/1; 5Y 6/1), and light olive gray (5Y 6/2) mottled with yellowish brown. It ranges from clay through silty clay loam. The A horizon is slightly acid to very strongly acid. The B horizon is very strongly acid and ranges to moderately alkaline below a depth of 40 inches.

Wrightsville-Vidrine complex (Wv).—These level and nearly level, poorly drained and somewhat poorly drained soils are adjacent to major streams in the southern half of the parish. The Wrightsville soil makes up about 65 percent of the acreage, and the Vidrine soil 30 percent.

The Wrightsville soil is in broad, flat areas and is the intermound part of this complex. This soil has the profile described as representative for the series. Generally, it is very low in nitrogen and phosphorus and low in potassium. It is strongly acid in the surface layer and very strongly acid to moderately alkaline in the subsoil. Available water capacity is moderate.

The Vidrine soil is on mounds and small ridges. It is wet for extended periods because permeability is very slow in the subsoil. This soil has a grayish-brown silt loam surface layer. The upper part of the subsoil is yellowish-brown silt loam, and the lower part is grayish-brown silty clay mottled with red. The soil generally is very low in nitrogen and phosphorus and low in potassium. It is strongly acid in the surface layer and grades to neutral in the lower part of the subsoil. It generally is very low in nitrogen and phosphorus and low in potassium. Surface runoff is slow to medium and available water capacity is moderate.

Included in mapping are small areas of Acadia, Crowley, and Mowata soils.

About 70 percent of the acreage is woodland, but an increasing amount is being cleared for crops and pasture. The soils are saturated in winter and early in spring, but lack adequate moisture for plants during dry periods in some years. The principal limitations are wetness and low fertility.

Crops and pasture.—These soils are moderately well suited to most crops and pasture plants grown locally. Suitable crops are rice, soybeans, cotton, and sweetpotatoes. Rice is well suited and is the principal crop. Suitable pasture plants are bermudagrass, Pensacola bahiagrass, ryegrass, white clover, and vetch.

The soils are well suited to flood irrigation. They are fairly easy to work and to keep in good tilth, but if they are under continuous cultivation, a plowpan is likely to form. Soil crusting after heavy rain is also a management concern.

Land smoothing and water leveling increase the effectiveness of flood irrigation and improve drainage. Where row crops are grown, proper row direction is needed to improve drainage.

Tilth can be improved by adding organic matter from crop residue and by growing grasses and legumes in rotation with other crops. Water planting of rice can overcome the effects of crusting. Subsoiling and chiseling help to prevent the formation of a plowpan. Response to fertilizer is good. Lime is needed, especially in pasture rotation. Capability unit IIIw–3.

Wildlife.—There are only a few small open areas. These soils are poorly suited as habitat for quail, dove, rabbit, and other openland wildlife. The soils are suitable habitat for deer, squirrel, rabbit, and other woodland wildlife. Small open areas planted to winter pasture plants provide a good supply of food for deer and rabbit. Forestry practices that favor mast-producing trees increase the squirrel population and furnish supplemental food for deer. The Wrightsville and Vidrine soils are suitable habitat for ducks, geese, crawfish, snipe, and other wetland wildlife.

Woodland.—The principal trees are loblolly pine, oak, and sweetgum. Trees suitable for planting are loblolly and slash pines. Potential productivity is moderately high on the Wrightsville soil and high on the Vidrine soil. The site index for loblolly pine is 83 on the Wrightsville soil and 93 on the Vidrine soil. Seedling mortality is moderate on the Wrightsville soil and slight on the Vidrine soil. Restrictions on the use of equipment are severe on Wrightsville soil and moderate on Vidrine soil because of wetness in winter and spring.

Well-managed wooded areas support a good cover of understory vegetation that cattle can graze. The major understory plants are pinehill bluestem, switchgrass, indiangrass, uniolas, sedges, rushes, low panicum, and carpetgrass. Under an open canopy, all or most of these plants can grow. As the canopy increases, the less shade-tolerant plants disappear, and the sedges, rushes, uniolas, and low panicums remain. Potential forage production per acre on woodland in excellent condition under a medium canopy is about 1,800 pounds air-dry weight.

Use and Management of the Soils

The soils of Evangeline Parish are used mainly for crops and pasture, woodland, and wildlife. This section explains in a general way how the soils can be managed for these purposes. It defines the capability classification, used by the Soil Conservation Service, in which the soils are grouped according to their suitability for crops, and table 2 shows estimated yields per acre of the principal crops grown under high level management.

This section also evaluates properties of the soils that affect their use in engineering structures, including highways.

Crops and Pasture

General principles of management of the soils for crops and pasture are given in the paragraphs that follow.

Fertilizing and liming.—Soil reaction in the survey area ranges from neutral to very strongly acid. The soils in crops and pasture are low in content of organic matter, low to very low in content of nitrogen, moderately low to very low in phosphorus, and moderate to very low in potassium. The need for fertilizer and lime should be determined by soil tests and crop requirements.

Maintaining organic-matter content.—Organic matter

is an important source of nitrogen; it also increases the rate of water intake, reduces surface crusting, and improves tilth. The supply of organic matter can be maintained by growing crops that produce an extensive root system and an abundance of foliage, by leaving plant residue on the soil, by growing perennial grasses and legumes in rotation with other crops, and by adding manure.

Tillage.—Excess tillage should be avoided. The soil should be tilled only enough to prepare a seedbed and control weeds. When plowed at a certain moisture content, the fine-textured soil forms clods. A compact layer forms in some soils if cultivating and harvesting equipment is used when the soils are too moist. This compact layer, generally called a plowpan or trafficpan, develops just below the plow layer. It can be broken up by deep plowing, by plowing to variable depths, and by chiseling.

Drainage.—Excess surface water should be removed from all the wet cultivated soils in the parish except where flood irrigation is practiced. The surface of the soil is drained by a gravity drainage system or by ditches. Land grading, water leveling in rice fields, and proper row direction improve surface drainage and increase the effectiveness of irrigation systems and farm equipment.

Capability grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The groups are made according to the limitations of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, horticultural crops, or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or for engineering.

In the capability system, all kinds of soil are grouped at three levels, the capability class, subclass, and unit. These are described 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.

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

In class I there are no subclasses, because the soils of this class have few limitations. Class V can contain, at the most, only the subclasses indicated by *w*, *s*, and *c*, because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation.

Capability Units are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe–4 or IIIe–3. Thus, in one symbol, the Roman numeral designates the capability class, or degree of limitation; the small letter indicates the subclass, or kind of limitations, as defined in the foregoing paragraph; and the Arabic numeral specifically identifies the capability unit within each subclass.

The capability classes, subclasses, and units that occur in the parish are described in the list that follows. Suggestions for use and management of each soil and the capability classification are given in the section "Descriptions of the Soils." The capability classification of each soil is also shown in the "Guide to Mapping Units."

Class I soils have few limitations that restrict their use.
- Unit I–1. Well-drained, loamy soils.

Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
- Subclass IIe. Soils subject to moderate water erosion if they are not protected.
  - Unit IIe–1. Moderately well drained to well drained, acid soils that have a reddish subsoil and that formed in loess.
  - Unit IIe–2. Moderately well drained, acid, loamy soils that have an acid subsoil.
  - Unit IIe–3. Well-drained, acid, loamy soils that have a reddish subsoil.
  - Unit IIe–4. Moderately well drained, acid, loamy soils that have a fragipan in the subsoil.
- Subclass IIw. Soils have moderate limitations because of excess water.
  - Unit IIw–1. Somewhat poorly drained, acid, loamy soils.
  - Unit IIw–2. Poorly drained, dark-colored, loamy soils that are alkaline in the subsoil.
  - Unit IIw–3. Poorly drained to well-drained, acid soils that have a loamy subsoil.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.
- Subclass IIIe. Soils subject to severe erosion if they are cultivated and not protected.
  - Unit IIIe–1. Somewhat poorly drained, acid soils that have a loamy surface layer and clayey subsoil.

Unit IIIe–2. Moderately well drained, acid soils that formed in loess.
Unit IIIe–3. Well-drained, acid, loamy soils that have a reddish subsoil.

Subclass IIIw. Soils have severe limitations because of excess water.
Unit IIIw–1. Poorly drained and moderately well drained, acid soils that have a loamy subsoil.
Unit IIIw–2. Poorly drained and moderately well drained, undulating, acid soils that have a loamy subsoil.
Unit IIIw–3. Poorly drained and somewhat poorly drained, acid soils that have a loamy subsoil.
Unit IIIw–4. Poorly drained and somewhat poorly drained, acid, loamy soils that are clayey in the subsoil.
Unit IIIw–5. Poorly drained soils that have a silty clay loam surface layer and clayey subsoil.
Unit IIIw–6. Somewhat poorly drained, clayey soils that are calcareous in the subsoil.
Unit IIIw–7. Poorly drained, acid, loamy soils that have a clayey subsoil.

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

Subclass IVe. Soils are subject to severe erosion if they are cultivated and not protected.
Unit IVe–1. Moderately well drained and well drained, acid soils that have moderate slopes.

Subclass IVw. Soils have severe limitations for cultivation because of excess water.
Unit IVw–1. Poorly drained, acid, loamy soils that are subject to occasional damaging floods.

Class V soils are not likely to erode, but have other limitations, impractical to remove without major reclamation, that limit their use largely to pasture, woodland, or wildlife.

Subclass Vw. Soils have a very severe limitation because of frequent flooding.
Unit Vw–1. Poorly drained, frequently flooded, acid, loamy soils on stream bottom lands.
Unit Vw–2. Well-drained, frequently flooded, acid, loamy soils on stream bottom lands.
Unit Vw–3. Poorly drained and well-drained, frequently flooded, loamy soils.
Unit Vw–4. Poorly drained, frequently flooded, clayey soils.

Class VI soils have severe limitations that make them generally unsuitable for cultivation and that limit their use largely to pasture, woodland, or wildlife food and cover.

Subclass VIe. Soils severely limited, chiefly by risk of erosion if protective cover is not maintained.
Unit VIe–1. Well-drained, steep, acid, loamy soils that have a reddish subsoil.
Unit VIe–2. Well-drained, moderately steep, acid, sandy soils that have a reddish subsoil.
Unit VIe–3. Well-drained, steep, acid soils that have a clayey reddish subsoil.

Estimated yields

Table 2 shows estimated yields, under a high level of management, for the principal crops grown in Evangeline Parish. These are yields averaged over a 10-year period. The estimates are based chiefly on observations made by members of the soil survey party and on information supplied by farmers, district conservationists, and other agricultural workers. All yield estimates, except for rice, are based on average rainfall and adequate drainage. Irrigation is not considered.

High-level management includes (1) good seedbed preparation, (2) use of suitable high-yielding crop varieties, (3) fertilization in accordance with needs determined through soil tests, (4) control of insects, weeds, and plant diseases, (5) drainage for naturally wet soil, (6) measures for control of erosion, and (7) timely fieldwork.

Woodland and Woodland Grazing [2]

Commercial forests cover 48 percent of Evangeline Parish. The total acreage of woodland in the parish is 205,590 acres, and it is all privately owned. Pine makes up the major part of the marketable timber by volume.

The suitability of each soil for wood crops is evaluated in the section "Descriptions of the Soils." Factors that affect woodland management in Evangeline Parish are defined in the following paragraphs.

Productivity is expressed in terms of site index, which is the height in feet to which a tree will grow in a specified number of years. The site index is 30 feet for cottonwood and 50 feet for other trees.

Equipment restriction refers to the limitation in the use of equipment for managing or harvesting the tree crop. A rating of *slight* indicates that the equipment used is seldom limited in kind or in the time of year. A rating of *moderate* indicates a need for modified equipment or seasonal restrictions because of wetness, flooding, or overflow. A rating of *severe* indicates the need for special equipment.

Seedling mortality refers to expected survival of seedlings during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of *slight* indicates that unsatisfactory survival of seedlings on less than 25 percent of the area is likely. A rating of *moderate* indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of *severe* indicates that unsatisfactory survival is likely on more than 50 percent of the area.

The kind and amount of understory vegetation that can be produced are related to the soil, climate, and amount of tree overstory. In much of the woodland, grazing by cattle can be a compatible secondary use. The grasses, legumes, forbs, and many of the woody browse species in the understory are grazable by cattle. Under proper management, this understory vegetation can be grazed and thus supplements a woodland enterprise without damage to the wood crop.

[2] Prepared by H. FORD FALLIN, woodland conservationist, Soil Conservation Service.

TABLE 2.—*Estimated average acre yields of principal crops and pasture plants under high level of management*

[Absence of data means the crop is not commonly grown on the soils]

Soil	Crops				Pasture	
	Rice	Cotton	Sweet-potatoes	Soybeans	Common bermuda-grass	Pensacola bahiagrass
	Bu.	*Lb. lint*	*Bu.*	*Bu.*	*A.U.M.*[1]	*A.U.M.*
Acadia silt loam, 1 to 3 percent slopes	80	400	250	20	6.0	7.5
Basile-Wrightsville complex, frequently flooded					4.0	
Caddo-Messer complex	80	400	200	18	5.0	6.0
Caddo-Messer complex, undulating	75	400	200	18	5.0	6.0
Calhoun silt loam	85	425	250	22	5.5	6.5
Calhoun-Duralde complex	80	400	225	20	5.5	6.0
Cascilla silt loam, frequently flooded					6.0	
Crowley-Vidrine complex	105	500	275	25	6.0	7.5
Dossman silt loam, 1 to 5 percent slopes, eroded		450	260	22	6.0	7.5
Dossman soils, 8 to 30 percent slopes						
Duralde silt loam, 1 to 3 percent slopes		500	250	22	6.0	7.5
Evangeline silt loam, 1 to 3 percent slopes, eroded		500	260	22	6.0	7.5
Evangeline silt loam, 3 to 5 percent slopes, eroded		450	250	22	6.5	7.0
Frost silt loam, occasionally flooded				18	6.0	6.0
Gallion silt loam		725	300	32	7.3	10.0
Gallion silty clay loam	85	500		30	7.3	10.0
Glenmora silt loam, 1 to 3 percent slopes	80	400	225	24	5.6	7.0
Guyton-Cascilla complex, frequently flooded					5.5	
Guyton silt loam, occasionally flooded	90			16	4.5	5.5
Jeanerette silt loam	105	650	270	28	6.8	7.5
Kenney fine sand, sandy subsoil variant, hilly						
Latanier clay	85	500		30	6.5	10.0
Loring silt loam, 3 to 5 percent slopes, eroded		600	270	24	7.5	10.5
Mamou silt loam, 1 to 3 percent slopes	90	500	260	25	7.0	7.5
McKamie soils, 8 to 30 percent slopes					4.0	4.5
Midland silty clay loam	120			20	6.5	10.0
Moreland clay	90	500		26	6.5	10.0
Mowata silt loam	115	450	240	24	6.8	7.5
Muskogee-McKamie complex, 3 to 8 percent slopes, eroded		400	225	22	5.0	5.0
Olivier silt loam, 1 to 3 percent slopes, eroded	75	700	290	28	6.0	7.5
Patoutville silt loam, 1 to 3 percent slopes, eroded	90	675	280	26	6.0	7.5
Patoutville-Crowley complex	100	700	290	28	6.0	7.5
Perry clay, frequently flooded					5.5	
Ruston fine sandy loam, 1 to 5 percent slopes		450	220	20	6.0	8.8
Ruston fine sandy loam, 5 to 8 percent slopes		440	210	18	6.0	8.8
Savannah very fine sandy loam, 1 to 3 percent slopes		500		20	6.0	8.8
Tenot-Calhoun complex		400	230	20	6.0	7.5
Tenot silt loam, 1 to 3 percent slopes		450	250	22	6.0	7.5
Wrightsville-Vidrine complex	95	250	225	22	6.0	7.5

[1] Animal-unit-month. The amount of forage or feed required to maintain one animal unit for a period of 30 days.

The success of a combined woodland and livestock program depends mainly on the degree and time of grazing of the forage plants. Intensity of grazing should be such that it will maintain adequate cover for soil protection and maintain or improve the quantity and quality of trees and forage vegetation.

Potential forage production varies according to the type of woodland and the amount of sunlight that reaches the understory vegetation during the growing season.

This potential understory vegetation is the vegetation that originally grew on these soils under the trees. It is generally the most productive and most suitable vegetative community for the soils and will reproduce itself as long as the environment does not change. Research has proven that there is a close correlation between the total potential yield of grasses, legumes, and forbs in the woods and the amount of sunlight that reaches the ground at midday in the forest. Herbage production continues to decline as the forest canopy becomes more dense. For this reason, the percent of tree canopy is used to reflect the effect a particular age and density of trees have on the potential production of the understory vegetation of the soils.

Four canopy classes—open, sparse, medium, and dense—are designated to reflect the difference in forage production. In *open* canopy, less than 20 percent of the understory vegetation is shaded at midday. In *sparse* canopy, 21 to 35 percent is shaded, in *medium* canopy, 36 to 55 percent is shaded, and in *dense* canopy, more than 56 percent of the vegetation is shaded at midday.

Forage condition classes are used to indicate the degree of departure from the potential understory vegetation that has been brought about by grazing or other uses. These classes show the present condition of the veg-

etation on the soils in relation to vegetation that could grow there.

A grazable woodland is in *excellent* condition if 76 percent or more of the present understory is the same kind that originally grew on the soil. It is in *good* condition if the percentage is between 51 and 75 percent, in *fair* condition if the percentage is between 26 and 50, and in *poor* condition if the present percentage is less than 25.

Potential forage production depends on woodland suitability and canopy class. Current forage production depends upon the forage condition class and the moisture available to the plants during their growing season.

One of the main objectives in good woodland grazing management is to keep the woodland forage in excellent and good condition. If this is done, water is conserved, yields are improved, and the soils are protected.

Wildlife [3]

The soils and the water areas of Evangeline Parish furnish suitable habitat for many kinds of wildlife and fish. Some species are present in large number, whereas others are relatively scarce or seasonal. Wildlife species associated with woodland are found in the northern part of the parish and in wooded areas along drainageways in the southern part. Openland wildlife are most abundant in the southern prairie part of the parish. The level of the game and fish population depends on the amount and quality of available habitat.

The northern part of Evangeline Parish has a moderate population of deer, squirrel, rabbit, and quail, and the southern part has a seasonal population of dove, ducks, geese, and snipe.

Sport fishing for bass, white perch, and bluegill is fair in Chicot Lake, Cocodrie Lake, and Millers Lake. Commercial fishing for catfish is fair in Bayou Cocodrie. Fishing for crawfish is good in improved habitat in the Red River bottom land area and fair in the rice-growing area.

Definitions of suitability ratings of soils used for wildlife habitat are as follows:

Well suited means that habitat generally is easily created, improved, or maintained; that the soil has few or no limitations that affect management; and that satisfactory results can be expected.

Suited means that habitat can be created, improved, or maintained in most places; that the soil has moderate limitations that affect management; and that moderate intensity of management and fairly frequent attention may be required for satisfactory results.

Poorly suited indicates that habitat can be created, improved, or maintained in most places; that the soil has severe limitations; that habitat management is difficult and expensive and requires intensive effort; and that results are not always satisfactory.

Unsuited indicates that it is impractical or impossible to create, improve, or maintain habitat and that unsatisfactory results are probable.

For detailed information on the use of each soil for wildlife habitat, refer to the mapping unit description in the section "Descriptions of the Soils."

[3] Prepared by RAY SMITH, biologist, Soil Conservation Service.

Soils and Engineering [4]

Some soil properties are of special interest to engineers because they affect the construction and maintenance of roads, airports, pipelines, building foundations, facilities for water storage, erosion control structures, drainage systems, and sewage disposal systems. Among the properties most important to engineers are permeability, strength, consolidation characteristics, texture, plasticity, and soil reaction. Depth to unconsolidated materials, and topography are also important.

Information concerning these and related soil properties is given in tables 3, 4, and 5. The estimates and interpretations in these tables can be used to—

1. Make studies that will aid in selecting and developing industrial, commercial, residential, and recreational sites.
2. Make preliminary estimates of the engineering properties of soils in planning drainage systems, farm ponds, irrigation systems, terraces, waterways, and diversion terraces.
3. Make preliminary evaluations of soil conditions that will aid in selecting sites for highways, airports, pipelines, and cables and in planning detailed investigations at selected locations.
4. Locate probable sources of gravel, sand, and other construction material.
5. Correlate performance of soil mapping units to develop information that will be useful in planning engineering practices and in designing and maintaining engineering structures.
6. Determine the suitability of soils for cross-country movement of vehicles and construction equipment.
7. Supplement other publications, such as maps, reports, and aerial photographs, that are used in preparation of engineering reports for a specific area.
8. Develop other preliminary estimates for construction purposes pertinent to the particular area.

The engineering interpretations reported here do not eliminate the need for sampling and testing at the site of specific engineering work which involves heavy loads or excavations that are deeper than the depths reported (ordinarily about 5 feet). Even in these situations, however, the soil map is useful in planning more detailed field investigations and in indicating the kinds of problems that may be expected.

Some of the terms used by soil scientists have special meanings in soil science that may not be familiar to engineers. These terms are defined in the Glossary.

Engineering classification systems

The two systems most commonly used in classifying soils for engineering are the systems approved by the American Association of State Highway Officials (AASHO) and the Unified system.

[4] Prepared by ARVILLE TOUCHET, soil scientist, and NATHAN SCHILLER, area engineer, Soil Conservation Service, in cooperation with the Louisiana Department of Highways.

TABLE 3.—*Engineering*

[Tests performed by the Louisiana Department of Highways in accordance with

Soil series and sample location	Louisiana Department of Highways report number	Depth from surface in typical profile	Mechanical analysis [1]		
			Percent passing sieve—		
			No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)
		In.			
Acadia:					
E¼ sec. 38, T. 6 S., R. 2 W.	30776	8–15	100	98	78
	30777	23–40	100	100	96
Dossman:					
Sec. 40, T. 3 S., R. 1 E.	21204	0–6	100	99	98
	21205	6–22	100	100	100
	21206	46–90	100	100	100
Duralde:					
SE¼SE¼ sec. 25, T. 2 S., R. 1 W.	21934	18–34	98	97	97
	21935	34–52	99	98	98
Evangeline:					
Sec. 36, T. 3 S., R. 1 E.	21207	1–6	100	98	95
	21208	6–16	99	99	96
	21209	26–40	99	99	97
Jeanerette:					
Sec. 75, T. 5 S., R. 2 E.	16374	10–18	99	95	94
	16375	18–32	96	95	95
	16376	32–50	100	99	98
Loring:					
NW¼NW¼ sec. 80, T. 4 S., R. 3 E.	20030	5–17	100	100	99
	20031	17–25	100	99	98
	20032	25–44	100	99	97

[1] Mechanical analysis according to AASHO Designation: T 88–57 (*1*). Results by this procedure may differ somewhat from results the hydrometer method and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimillimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analysis data used in this table are not suitable

test data

standard procedures of the American Association of State Highway Officials (AASHO)]

Mechanical analysis [1]—Continued				Liquid limit	Plasticity index	Moisture density [2]			Classification	
Percent smaller than—										
0. 05 mm.	0. 02 mm.	0. 005 mm.	0. 002 mm.			Maximum dry density	Optimum moisture content for maximum dry density	Moisture content for 95 percent of maximum dry density	AASHO	Unified
				Pct.		*Lb./cu. ft.*	*Pct.*	*Pct.*		
73	65	26	21	27	12	111	15	10–19	A–6(9)	CL
92	76	49	44	50	29	97	24	20–27	A–7–6(18)	CH
96	46	17	13	27	7	103	16	9–21	A–4–(8)	ML–CL
99	64	40	34	45	24	99	22	18–26	A–7–6(14)	CL
99	54	28	22	35	15	107	17	13–21	A–6(10)	CL
97	65	30	27	40	20	101	20	14–23	A–6(12)	CL
98	58	24	21	34	15	107	17	13–21	A–6(10)	CL
94	46	25	18	28	7	109	16	12–17	A–4(8)	ML–CL
96	68	32	25	35	14	101	20	14–24	A–6(10)	CL
97	54	32	26	43	25	99	22	18–26	A–7–6(15)	CL
91	76	35	30	43	26	101	21	14–24	A–7–6(15)	CL
93	82	36	30	46	29	101	20	18–25	A–7–6(17)	CL
93	76	33	26	46	30	103	20	10–25	A–7–6(17)	CL
97	72	36	29	44	25	94	23	16–29	A–7–6(15)	CL
94	63	29	23	41	19	99	22	18–26	A–7–6(12)	CL
96	76	29	22	38	16	107	17	13–21	A–6(10)	CL

obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by meters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than for naming textural classes for soils. [2] Based on AASHO Designation: T 99–57, Method A (*1*).

TABLE 4.—*Estimated*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils for referring to other series that appear in the first column of

Soil series and map symbols	Depth from surface [1]	Classification			Percentage passing sieve—	
		USDA	Unified	AASHO	No. 40 (0.42 mm.) [2]	No. 200 (0.074 mm.)
	In.					
Acadia: AcB	0–9	Silt loam	ML	A–4	95–100	85–100
	9–19	Silty clay loam	CL	A–6	95–100	75–100
	19–50	Silty clay or clay	CH	A–7–6	95–100	85–100
*Basile: Bw	0–22	Silt loam	ML	A–4	90–100	75–95
For Wrightsville part of Bw, see Wrightsville series.	22–50	Silty clay loam	CL	A–6	95–100	90–95
	50–63	Silt loam	CL	A–6 or A–4	95–100	80–95
*Caddo: Ca, CaB	0–17	Silt loam	ML	A–4	95–100	70–95
For Messer part of these units, see Messer series.	17–56	Silt loam, silty clay loam	CL or ML	A–6	95–100	70–95
*Calhoun: Ch, Cn	0–20	Silt loam	ML or ML–CL	A–4	100	95–100
For Duralde part of Cn, see Duralde series.	20–70	Silty clay loam or silt loam	CL or ML–CL	A–6 or A–4	100	95–100
Cascilla: Cs	0–60	Silt loam	ML–CL or ML	A–6 or A–4	95–100	90–100
*Crowley: Cv	0–20	Silt loam	ML or ML–CL	A–4	100	90–100
For Vidrine part of Cv, see Vidrine series.	20–40	Silty clay or silty clay loam	CH	A–7–6	100	95–100
	40–80	Silty clay loam	CL or CH	A–6 or A–7–6	100	95–100
Dossman: DoC2, DsE	0–9	Silt loam	ML or ML–CL	A–4	95–100	90–100
	9–32	Silty clay loam	CL	A–7–6	100	95–100
	32–72	Silt loam or silty clay loam	CL	A–6	100	95–100
Duralde: DuB	0–4	Silt loam	ML	A–4	95–100	95–100
	4–21	Silt loam	ML or ML–CL	A–4 or A–6	95–100	95–100
	21–92	Silty clay loam or silt loam	CL	A–7 or A–7–6	95–100	95–100
Evangeline: EvB2, EvC2	0–12	Silt loam	ML or ML–CL	A–4	95–100	95–100
	12–30	Silt loam or silty clay loam	CL	A–6	95–100	95–100
	30–63	Silty clay loam	CL	A–7–6 or A–6	95–100	95–100
Frost: Fr	0–17	Silt loam	ML–CL	A–4 or A–6	95–100	85–95
	17–51	Silty clay loam	CL	A–6 or A–7–6	95–100	90–100
Gallion: Ga, Gc	0–13	Silty clay loam or silt loam	CL or ML	A–6 or A–4	95–100	85–100
	13–24	Silty clay loam	CL	A–6 or A–7–6	95–100	90–100
	24–50	Very fine sandy loam	ML	A–4	95–100	75–95
Glenmora: GeB	0–14	Silt loam	ML	A–4	90–100	75–85
	14–25	Silty clay loam	CL	A–6	95–100	80–95
	25–80	Silty clay loam	CL	A–6	95–100	80–95
*Guyton: Gu, Gy	0–30	Silt loam	ML or ML–CL	A–4	95–100	65–80
For Cascilla part of Gy, see Cascilla series.	30–70	Silty clay loam	CL	A–6	95–100	75–90
Jeanerette: Je	0–10	Silt loam	ML–CL or ML	A–4 or A–6	95–100	95–100
	10–32	Silty clay loam	CL	A–7–6 or A–6	95–100	85–100
	32–50	Heavy silt loam	CL or ML–CL	A–7–6 or A–6	95–100	90–100
Kenney: KeE	0–80	Fine sand	SP–SM or SM	A–3 or A–2–4	50–70	5–15
Latanier: La	0–22	Clay	CH	A–7–6	100	95–100
	22–46	Silty clay loam or silt loam	CL or ML	A–4 or A–6	100	95–100
Loring: LoC2	0–5	Silt loam	ML	A–4	95–100	95–100
	5–23	Silty clay loam	CL	A–6 or A–7–6	95–100	95–100
	23–60	Silt loam	ML–CL or CL	A–4 or A–6	95–100	95–100

See footnotes at end of table.

engineering properties

in such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions this table. Symbol < means less than; symbol > means more than]

Reaction	Permeability	Available water capacity	Shrink-swell potential	Wetness hazard	Flood hazard	Corrosivity of—	
						Uncoated steel	Concrete
pH	*In./hr.*	*In./in. of soil*					
4. 5–6. 0	0. 2–0. 63	0. 21–0. 23	Low	Moderate	Slight	High	Moderate.
4. 5–5. 5	0. 2–0. 63	0. 20–0. 21	Moderate.				
4. 5–5. 5	<0. 06	0. 19–0. 20	High.				
4. 5–6. 0	0. 63–2. 0	0. 18–0. 20	Low	Severe	Severe	High	Low.
5. 5–8. 4	0. 06–0. 2	0. 20–0. 22	Moderate.				
7. 0–8. 4	0. 06–0. 2	0. 18–0. 20	Low.				
4. 5–5. 5	0. 63–2. 0	0. 21–0. 23	Low	Severe	Slight to moderate.	High	Moderate to high.
4. 5–6. 5	0. 06–0. 2	0. 20–0. 22	Low.				
4. 5–6. 0	0. 2–0. 63	0. 22–0. 23	Low	Severe	Slight to moderate.	High	Moderate.
5. 0–7. 3	0. 06–0. 2	0. 21–0. 23	Low to moderate.				
4. 5–6. 0	0. 63–2. 0	0. 21–0. 23	Low	No hazard	Severe	Low	Moderate.
4. 5–6. 0	0. 2–0. 63	0. 22–0. 23	Low	Moderate to severe.	Slight	High	Moderate.
4. 5–6. 0	<0. 06	0. 19–0. 21	High.				
6. 0–7. 3	0. 06–0. 2	0. 20–0. 21	High.				
5. 0–6. 0	0. 63–2. 0	0. 22–0. 23	Low	No hazard	Slight	Moderate	Moderate to severe.
4. 5–5. 5	0. 2–0. 63	0. 20–0. 22	Moderate.				
4. 5–5. 5	0. 63–2. 0	0. 22–0. 23	Low.				
4. 5–6. 0	0. 63–2. 0	0. 22–0. 23	Low	Moderate	Slight	High	Moderate.
4. 5–5. 5	0. 2–0. 63	0. 22–0. 23	Low.				
5. 0–7. 3	[3] 0. 06–0. 2	0. 20–0. 22	Moderate.				
4. 5–6. 5	0. 63–2. 0	0. 22–0. 23	Low	Slight	Slight	High	Moderate.
4. 5–6. 0	0. 2–0. 63	0. 20–0. 22	Low to moderate.				
4. 5–6. 0	0. 2–0. 63	0. 20–0. 22	Moderate.				
4. 5–6. 0	0. 2–0. 63	0. 22–0. 23	Low	Severe	Moderate to severe.	High	Moderate.
<4. 5–5. 5	0. 06–0. 2	0. 20–0. 21	Moderate.				
5. 6–7. 3	0. 2–2. 0	0. 20–0. 23	Moderate to low	Slight	Slight	Moderate	Low.
6. 6–8. 4	0. 2–0. 63	0. 20–0. 22	Moderate.				
6. 6–8. 4	0. 63–2. 0	0. 19–0. 22	Low.				
4. 5–5. 0	0. 63–2. 0	0. 18–0. 20	Low	Slight	Slight	High	Moderate.
4. 5–5. 0	0. 2–0. 63	0. 19–0. 20	Low to moderate.				
4. 5–7. 3	0. 06–0. 2	0. 19–0. 20	Low to moderate.				
4. 5–5. 0	0. 2–0. 63	0. 21–0. 23	Low	Severe	Moderate to severe.	High	High.
<4. 5–5. 0	<0. 06	0. 20–0. 22	Low to moderate.				
5. 6–7. 3	0. 2–0. 63	0. 22–0. 23	Low	Severe	Slight to moderate.	High	Low.
6. 5–8. 4	0. 06–0. 2	0. 21–0. 22	Moderate.				
7. 4–8. 4	0. 2–0. 63	0. 22–0. 23	Low to moderate.				
5. 6–6. 5	2. 0–6. 3	0. 08–0. 11	Very low	No hazard	Slight	Low	Moderate.
6. 1–8. 4	<0. 06	0. 18–0. 20	Very high	Moderate	Moderate	High	Low.
6. 6–8. 4	0. 06–0. 63	0. 20–0. 22	Low to moderate.				
5. 5–6. 5	0. 2–0. 63	0. 22–0. 23	Low	Slight	Slight	Moderate to high.	Moderate.
5. 0–6. 0	0. 2–0. 63	0. 21–0. 23	Low to moderate.				
5. 5–6. 0	0. 2–0. 63	0. 15–0. 19	Low.				

TABLE 4.—*Estimated*

Soil series and map symbols	Depth from surface [1]	Classification			Percentage passing sieve—	
		USDA	Unified	AASHO	No. 40 (0.42 mm.) [2]	No. 200 (0.074 mm.)
	In.					
Mamou: MaB	0–11	Silt loam	ML or ML–CL	A–4	95–100	85–95
	11–19	Silty clay loam	CL or CH	A–7–6	95–100	90–100
	19–64	Loam or silty clay loam	CL or ML	A–6	95–100	90–100
McKamie: McE	0–3	Very fine sandy loam	SM and ML	A–4	90–100	40–60
	3–70	Clay	CH	A–7–6	95–100	85–95
Messer	0–8	Silt loam	ML	A–4	95–100	75–95
Mapped only in complex with soils of Caddo series.	8–31	Silt loam	ML	A–4	95–100	80–95
	31–63	Silty clay loam	CL	A–6	95–100	85–95
Midland: Md	0–5	Silty clay loam	CL	A–6 or A–7–6	100	95–100
	5–57	Clay	CH	A–7–6	100	95–100
Moreland: Mo	0–40	Clay	CH	A–7–6	100	95–100
	40–54	Clay or silty clay loam	CH or CL	A–7–6 or A–6	100	95–100
Mowata: Mt	0–23	Silt loam	ML or ML–CL	A–4	100	90–100
	23–46	Silty clay	CL or CH	A–7–6 or A–6	100	90–100
	46–60	Silty clay loam	CL	A–6	100	90–100
*Muskogee: MuD2	0–6	Silt loam	ML	A–4	95–100	65–85
For McKamie part of MuD2, see McKamie series.	6–22	Silty clay loam	CL	A–6	95–100	75–95
	22–80	Silty clay	CH or CL	A–7–6	95–100	95–100
Olivier: OlB2	0–5	Silt loam	ML or ML–CL	A–4	100	95–100
	5–12	Silty clay loam or silt loam	CL	A–6	100	95–100
	12–65	Silt loam	ML–CL or CL	A–4 or A–6	100	95–100
*Patoutville: PaB2, Pc	0–7	Silt loam	ML	A–4	100	95–100
For Crowley part of Pc, see Crowley series.	7–20	Silty clay loam	CL or CH	A–6–7 or A–6	100	95–100
	20–57	Silty clay loam or silt loam	CL	A–6	100	95–100
Perry: Pe	0–33	Clay	CH or CH–MH	A–7–6 or A–7–5	100	95–100
	33–60	Clay	CH or CH–MH	A–7–6 or A–7–5	100	95–100
Ruston: Ruc, RuD	0–15	Fine sandy loam	SM or ML	A–4 or A–2	80–90	30–60
	15–56	Sandy clay loam	SC or CL	A–6	80–90	35–75
Savannah: SaB	0–7	Very fine sandy loam	ML or SM	A–4	95–100	40–75
	7–34	Sandy clay loam or loam	CL or ML–CL	A–6 or A–4	95–100	50–75
	34–85	Loam or sandy clay loam	ML–CL or CL	A–4 or A–6	95–100	50–75
*Tenot: TeB, Th	0–13	Silt loam	ML	A–4	95–100	95–100
For the Calhoun part of Th, see Calhoun series.	13–24	Silty clay loam	CL or CH	A–6 or A–7–6	95–100	95–100
	24–63	Silty clay loam	CL	A–6	95–100	95–100
Vidrine	0–6	Silt loam	ML	A–4	90–100	80–95
	6–27	Silt loam	ML or ML–CL	A–4	95–100	90–95
Mapped only in complex with Crowley and Wrightsville soils.	27–46	Silty clay	CL or CH	A–7–6	95–100	85–95
	46–72	Silty clay loam	CL	A–7–6 or A–6	95–100	85–95
*Wrightsville: Wv	0–18	Silt loam	ML or CL	A–4 or A–6	95–100	95–100
For the Vidrine part, see Vidrine series.	18–46	Silty clay loam or silty clay	CL or CH	A–7–6	95–100	95–100

[1] None of these soils have bedrock or a permanent water table within 40 inches of the surface. Seasonal water tables are variable, and insufficient data are available for estimating precise depths.

engineering properties—Continued

Reaction	Permeability	Available water capacity	Shrink-swell potential	Wetness hazard	Flood hazard	Corrosivity of—	
						Uncoated steel	Concrete
pH	*In./hr.*	*In./in. of soil*					
5. 1–6. 5	0. 2–0. 63	0. 22–0. 23	Low	Moderate	Slight	High	Moderate.
5. 1–6. 5	0. 06–0. 2	0. 20–0. 22	High.				
5. 5–7. 3	0. 2–0. 63	0. 20–0. 22	Low to moderate.				
4. 5–5. 5	0. 63–2. 0	0. 20–0. 22	Low	No hazard	Slight	High	Moderate.
4. 5–8. 4	<0. 06	0. 18–0. 20	High.				
5. 1–5. 5	0. 63–2. 0	0. 16–0. 18	Low	Slight	Slight	High	High.
4. 5–6. 0	0. 63–2. 0	0. 18–0. 20	Low.				
4. 5–6. 0	0. 06–0. 2	0. 20–0. 22	Moderate.				
5. 0–6. 0	0. 06–0. 2	0. 20–0. 22	Moderate	Severe	Slight to moderate.	High	Low to moderate.
4. 5–7. 3	<0. 06	0. 18–0. 20	High.				
6. 5–8. 4	<0. 06	0. 18–0. 20	Very high	Severe	Moderate	Very high	Low.
7. 4–8. 4	<0. 2	0. 18–0. 22	Very high to high.				
5. 1–6. 0	0. 2–0. 63	0. 22–0. 23	Low	Severe	Moderate	Very high	Low to moderate.
5. 0–7. 3	<0. 06	0. 19–0. 21	High.				
5. 0–8. 4	<0. 2	0. 21–0. 23	Moderate.				
4. 5–5. 5	0. 63–2. 0	0. 21–0. 22	Low	Slight to moderate.	Slight	High to moderate.	Moderate.
4. 5–6. 0	0. 2–0. 63	0. 20–0. 21	Moderate.				
4. 5–6. 0	<0. 2	0. 19–0. 20	High.				
5. 6–6. 5	0. 2–0. 63	0. 22–0. 23	Low	Moderate	Slight	High	Moderate to high.
5. 1–6. 0	0. 06–0. 2	0. 20–0. 22	Low to moderate.				
5. 1–6. 0	0. 2–0. 63	0. 16–0. 19	Low.				
5. 6–6. 0	0. 2–0. 63	0. 22–0. 23	Low	Moderate	Slight	High	Moderate.
5. 1–7. 3	0. 06–0. 2	0. 20–0. 22	Moderate to high.				
5. 1–7. 3	0. 2–0. 63	0. 20–0. 22	Moderate.				
5. 1–7. 3	<0. 06	0. 18–0. 20	Very high	Severe	Severe	Very high	Low to moderate.
6. 5–8. 4	<0. 06	0. 18–0. 20	Very high.				
4. 5–5. 5	0. 63–2. 0	0. 14–0. 16	Very low	No hazard	Slight	Low	Moderate.
4. 5–5. 5	0. 63–2. 0	0. 15–0. 17	Low.				
5. 0–5. 5	0. 63–2. 0	0. 14–0. 20	Low	Slight	Slight	Moderate	Moderate.
4. 5–5. 0	0. 2–0. 63	0. 15–0. 18	Low to moderate.				
4. 5–5. 0	0. 2–0. 63	0. 11–0. 15					
5. 1–6. 5	0. 63–2. 0	0. 22–0. 23	Low	Moderate	Slight	High	Moderate.
5. 1–5. 5	0. 06–0. 2	0. 20–0. 22	High.				
5. 1–7. 3	0. 06–0. 2	0. 20–0. 22	Moderate.				
5. 1–5. 5	0. 63–2. 0	0. 19–0. 21	Low	Moderate	Slight	High	Moderate.
4. 5–6. 0	0. 2–0. 63	0. 22–0. 23	Low.				
4. 5–6. 5	0. 06–0. 2	0. 19–0. 20	High.				
6. 1–7. 3	0. 06–0. 2	0. 20–0. 22	High.				
4. 5–5. 5	0. 2–0. 63	0. 21–0. 23	Low	Severe	Moderate	Very high	Moderate.
4. 5–7. 3	<0. 06	0. 18–0. 20	High.				

[2] 100 percent passes the No. 10 sieve except for Duralde, Evangeline, and Frost soils, which are as much as 5 percent small concretions. [3] 0.06 to 0.63 below a depth of 60 inches.

TABLE 5.—*Engineering*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils for referring to other series that

oil series and map symbols	Degree of limitation and chief limiting factors for—						
	Septic tank filter fields	Sewage lagoons	Landscaping and gardening	Picnic areas and golf fairways	Playgrounds	Paved streets, airport runways, and parking areas	Highway location
Acadia: AcB	Severe: very slow permeability; moderate wetness.	Slight	Moderate: moderate wetness; low fertility; clayey subsoil may restrict root development; acid.	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: moderate wetness; poor subgrade material.	Moderate: moderate wetness; poor traffic-supporting capacity.
*Basile: Bw. For Wrightsville part of Bw, see Wrightsville series.	Severe: slow permeability; severe wetness; floods in unprotected areas.	Slight: severe if floodwaters are deep.	Severe: severe wetness; subject to flooding.	Severe: severe wetness; floods in unprotected areas.	Severe: severe wetness; floods in unprotected areas.	Severe: severe wetness; subject to flooding.	Severe: severe wetness; floods in unprotected areas; moderate traffic-supporting capacity.
*Caddo: Ca, CaB. For Messer part of these units, see Messer series.	Severe: slow permeability; severe wetness; floods in some areas.	Slight to moderate: fair site material.	Severe: severe wetness; low fertility; floods in some areas; acid.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Moderate to severe: severe wetness; fair subgrade material; floods in some areas.	Severe: severe wetness; floods in some areas; side slopes erode easily; poor traffic-supporting capacity.
*Calhoun: Ch, Cn. For the Duralde part of Cn, see Duralde series.	Severe: slow permeability; severe wetness; floods in some areas.	Slight to moderate: fair site material.	Severe: severe wetness; low fertility; floods in some areas; acid.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Moderate to severe: severe wetness; fair subgrade material; floods in some areas.	Severe: severe wetness; floods in some areas; side slopes erode easily; fair traffic-supporting capacity.
Cascilla: Cs	Severe: subject to flooding.	Moderate: moderate permeability; severe if floodwaters are deep.	Moderate to severe: subject to flooding; acid.	Moderate: subject to flooding.	Severe: subject to flooding.	Severe: subject to flooding.	Severe: subject to flooding.
*Crowley. Cv. For Vidrine part of Cv, see Vidrine series.	Severe: moderate to severe wetness; very slow permeability.	Slight	Moderate: moderate wetness; fairly low fertility; clayey subsoil.	Moderate: moderate to severe wetness.	Severe: moderate to severe wetness.	Severe: moderate to severe wetness; poor subgrade material.	Severe: moderate to severe wetness; fairly low traffic-supporting capacity; high shrink-swell potential in the subsoil.
Dossman: DoC2, DsE	Severe: moderately slow permeability below 32 inches; slope where greater than 10 percent.	Moderate on slopes of 1 to 7 percent; moderately slow permeability below 32 inches; severe on slopes more than 7 percent.	Slight on slopes of 1 to 8 percent; moderate on slopes of 8 to 12 percent; severe on slopes greater than 12 percent; acid.	Slight on slopes of 1 to 8 percent; moderate on slopes of 8 to 15 percent; severe on slopes greater than 15 percent.	Slight on slopes of 1 to 2 percent; moderate on slopes of 2 to 6 percent; severe on slopes more than 6 percent.	Moderate on slopes of 1 to 15 percent; severe on slopes greater than 15 percent.	Moderate: fair traffic-supporting capacity; Moderate shrink-swell potential in the subsoil; severe on slopes greater than 15 percent.
Duralde: DuB	Severe: slow permeability; moderate wetness.	Slight on slopes of 0 to 2 percent; moderate on slopes of 2 to 5 percent.	Moderate: moderate wetness; low fertility; acid.	Moderate: moderate wetness.	Moderate: moderate wetness; slopes where more than 2 percent.	Moderate: moderate wetness; fair subgrade material.	Moderate: fair traffic-supporting capacity; moderate shrink-swell potential in the subsoil; moderate wetness.

interpretations

in such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions appear in the first column of this table]

Degree of limitation and chief limiting factors for—Continued		Soil features affecting land grading or shaping	Suitability as a source of—						
Reservoir areas	Foundations for dwellings and low buildings		Highway subgrade material (road fill)	Road subbase material	Embankment material for earth dams or levees			Soil material for cement base	Topsoil
					Shell	Core	Homogenous		
Slight: some places are too nearly level for dam-type ponds.	Severe: moderate wetness; high shrink-swell in subsoil.	Moderate wetness; slope, where more than 3 percent; clayey subsoil material difficult to work.	Poor	Poor to a depth of 9 inches; not suitable between 9 and 50 inches.	Fair to a depth of 19 inches; poor between 19 and 50 inches.	Fair to a depth of 9 inches; good between 9 and 50 inches.	Fair to a depth of 50 inches.	Fair to a depth of 9 inches; very poor between 9 and 50 inches.	Fair.
Slight: may have seepage from dugouts.	Severe: severe wetness; moderate shrink-swell in subsoil; floods in unprotected areas.	Severe wetness; subject to flooding.	Poor	Poor to a depth of 22 inches; poor to not suitable between 22 and 50 inches.	Fair	Fair to a depth of 22 inches; fair to good between 22 and 50 inches.	Fair	Poor to very poor to a depth of 22 inches; very poor between 22 and 50 inches.	Fair.
Slight: some places are too nearly level for dam-type ponds.	Severe: severe wetness; subject to piping; floods in some areas.	Severe wetness limits working time; floods in some areas.	Poor to fair	Poor to a depth of 17 inches; poor to not suitable between 17 and 56 inches.	Fair	Fair	Fair	Poor to a depth of 17 inches; very poor between 17 and 50 inches.	Poor to fair.
Slight: some places are too nearly level for dam-type ponds.	Severe: severe wetness; subject to piping; floods in some areas.	Severe wetness limits working time.	Poor to fair	Poor to a depth of 20 inches; poor to not suitable between 20 and 70 inches.	Fair	Fair	Fair	Poor to a depth of 20 inches; very poor between 20 and 70 inches.	Fair.
Moderate: may have excess seepage from dugouts; topography generally favorable for dam-type ponds.	Severe: subject to flooding.	Subject to flooding.	Fair	Not suitable to poor.	Fair	Fair	Fair	Poor to very poor.	Good.
Slight: some places are too nearly level for dam-type ponds.	Severe: high shrink-swell potential below depth of 20 inches; moderate to severe wetness.	Moderate wetness; clay subsoil difficult to work.	Poor	Poor to a depth of 20 inches; not suitable between 20 and 80 inches.	Fair to a depth of 20 inches; fair to poor between 20 and 80 inches.	Fair to a depth of 20 inches; good between 20 and 80 inches.	Fair	Poor to a depth of 20 inches; very poor between 20 and 80 inches.	Fair.
Moderate: moderately slow permeability; dugout ponds may have excess seepage.	Moderate: moderate shrink-swell porential in subsoil; severe on slopes greater than 15 percent.	Slope, where greater than 3 percent.	Fair	Poor to a depth of 9 inches; not suitable between 9 and 32 inches; poor to not suitable between 32 and 106 inches.	Fair	Fair to a depth of 9 inches; good between 9 and 32 inches; fair between 32 and 106 inches.	Fair	Poor to a depth of 9 inches; very poor between 9 and 32 inches; poor between 32 and 106 inches.	Fair.
Slight: some places are too nearly level for dam-type ponds.	Moderate: moderate wetness; moderate shrink-swell potential in subsoil.	Moderate wetness.	Fair	Poor to a depth of 21 inches; not suitable between 21 and 92 inches.	Fair	Fair to a depth of 21 inches; good to fair between 21 and 92 inches.	Fair	Poor to a depth of 21 inches; very poor between 21 and 92 inches.	Fair.

TABLE 5.—*Engineering*

Soil series and map symbols	Degree of limitation and chief limiting factors for—						
	Septic tank filter fields	Sewage lagoons	Landscaping and gardening	Picnic areas and golf fairways	Playgrounds	Paved streets, airport runways, and parking areas	Highway location
Evangeline: EvB2, EvC2	Severe: moderately slow permeability; slight wetness.	Slight on slopes of 0 to 2 percent; moderate on slopes greater than 2 percent.	Slight: low fertility; acid.	Slight	Slight to moderate: slight wetness; slope, where more than 2 percent.	Slight on slopes of 0 to 3 percent; moderate on slopes of 3 to 5 percent.	Moderate: fair traffic-supporting capacity; slight wetness; moderate shrink-swell potential in the subsoil.
Frost: Fr	Severe: slow permeability; severe wetness; floods in some areas.	Slight	Severe: severe wetness; floods in some areas; low fertility; acid.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; fair subgrade material; floods in some areas.	Severe: severe wetness; floods in some areas; fairly low traffic-supporting capacity.
Gallion: Ga, Gc	Severe: moderately slow permeability; slight wetness.	Slight	Slight on silt loam; moderate on silty clay loam; somewhat difficult to work.	Slight on silt loam; moderate on silty clay loam due to poor trafficability.	Slight on silt loam; moderate on silty clay loam because of poor trafficability.	Moderate: fair subgrade material.	Moderate: fair traffic-supporting capacity; slight wetness.
Glenmora: GeB	Severe: slow permeability; slight wetness.	Slight on slopes of 0 to 2 percent; moderate on slopes of 2 to 3 percent.	Moderate: slight wetness; low fertility; acid.	Slight	Moderate: slow permeability and slight wetness; slope where more than 2 percent.	Moderate: slight wetness; fair subgrade material.	Moderate: fair traffic-supporting capacity; slight wetness.
*Guyton: Gu, Gy For Cascilla part of Gy, see Cascilla series.	Severe: very slow permeability; severe wetness; very severe if flooded.	Moderate: fair dam material; severe if floodwaters are deep.	Severe: low fertility; severe wetness; acid; very severe if flooded.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; fair subgrade material; floods in some areas.	Severe: wetness; floods in some areas; poor traffic-supporting capacity; fair subgrade material.
Jeanerette: Je	Severe: severe wetness; slow permeability; floods in some areas.	Slight	Moderate: severe wetness; floods in some areas; alkaline.	Moderate to severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; fair subgrade material; floods in some areas.	Severe: severe wetness; fair traffic-supporting capacity; floods in some areas.
Kenney sandy subsoil variant: KeE.	Moderate on slopes of 5 to 12 percent; severe on slopes greater than 12 percent.	Severe: rapid permeability; poor site material; slope, where greater than 3 percent.	Severe: low water-holding capacity; acid; low fertility; slope, where greater than 8 percent.	Moderate: poor traction when dry; severe on slopes greater than 12 percent; difficult to establish good sod for golf fairways.	Moderate: poor traction when dry; subject to blowing; severe on slopes greater than 5 percent.	Moderate on slopes of 3 to 8 percent; severe on slopes greater than 8 percent.	Slight on slopes of 3 to 6 percent; moderate on slopes of 6 to 15 percent; severe on slopes greater than 15 percent.
Latanier: La	Severe: very slow permeability; moderate wetness; floods in some areas.	Slight	Severe: moderate wetness; clay texture difficult to work; alkaline; floods in some areas.	Severe: moderate wetness; poor trafficability; subject to cracking during dry periods; floods in some areas.	Severe: moderate wetness; poor trafficability; subject to cracking during dry periods; floods in some areas.	Severe: moderate wetness; poor subgrade material in upper 22 inches; difficult to work; floods in some areas.	Severe: moderate wetness; low traffic-supporting capacity; very high shrink-swell potential in upper 20 inches; floods in some areas.

interpretations—Continued

Degree of limitation and chief limiting factors for—Continued		Soil features affecting land grading or shaping	Suitability as a source of—						
Reservoir areas	Foundations for dwellings and low buildings		Highway subgrade material (road fill)	Road subbase material	Embankment material for earth dams or levees			Soil material for cement base	Topsoil
					Shell	Core	Homogenous		
Moderate: moderately slow permeability.	Moderate: slight wetness; moderate shrink-swell potential in the subsoil.	Slope, where greater than 3 percent.	Fair	Poor to a depth of 12 inches; not suitable between 12 and 80 inches.	Fair	Poor to a depth of 12 inches; good between 12 and 80 inches.	Fair	Poor to a depth of 12 inches; very poor between 12 and 80 inches.	Fair.
Slight	Severe: severe wetness; floods in some areas.	Severe wetness; floods in some areas.	Poor	Poor to a depth of 17 inches; not suitable between 17 and 50 inches.	Fair	Fair to a depth of 17 inches; good between 17 and 50 inches.	Fair	Poor to a depth of 17 inches; very poor between 17 and 50 inches.	Fair.
Moderate: some places are too nearly level for dam-type ponds; dugout ponds may have excessive seepage.	Moderate: moderate shrink-swell potential in subsoil.	Good on silt loam; silty clay loam somewhat difficult to work.	Fair: fair to poor on silty clay loam.	Poor to a depth of 13 inches; not suitable between 13 and 24 inches; poor between 24 and 50 inches.	Fair	Fair to a depth of 13 inches; good between 13 and 24 inches; fair between 24 and 50 inches.	Fair	Fair to a depth of 13 inches; very poor between 13 and 24 inches; poor between 24 and 50 inches.	Fair to good.
Slight: some places are too nearly level for dam-type ponds.	Moderate: slight wetness; low to moderate shrink-swell potential in subsoil.	Slight wetness	Fair	Poor to a depth of 14 inches; not suitable between 14 and 80 inches.	Fair	Fair to a depth of 14 inches; good between 14 and 80 inches.	Fair	Fair to a depth of 14 inches; very poor between 14 and 80 inches.	Fair.
Slight: some places are too nearly level for dam-type ponds.	Severe: severe wetness; floods in some areas.	Severe wetness limits working time; floods in some areas.	Poor to fair	Poor to a depth of 30 inches; not suitable between 30 and 70 inches.	Fair	Fair to a depth of 30 inches; good between 30 and 70 inches.	Fair	Fair to a depth of 30 inches; very poor to poor to a depth of 30 to 70 inches.	Poor to fair.
Slight: generally too nearly level for dam-type ponds.	Severe: severe wetness; floods in some areas.	Severe wetness; floods in some areas.	Poor	Poor to a depth of 10 inches; not suitable to poor between 10 and 50 inches.	Fair	Fair to a depth of 10 inches; good to fair between 10 and 50 inches.	Fair	Poor to a depth of 10 inches; very poor between 10 and 50 inches.	Fair.
Severe: Seepage rate generally too great for water impoundment.	Slight on slopes of 3 to 6 percent; moderate on slopes of 6 to 15 percent; severe on slopes greater than 15 percent.	Slope; poor traction when dry.	Fair	Fair	Fair	Not suited to poor.	Fair	Fair to good	Poor.
Slight: dugouts may have too severe seepage below a depth of 22 inches; too nearly level for dam-type ponds.	Severe: very high shrink-swell potential in upper 22 inches; moderate wetness.	Moderate wetness; difficult to work.	Poor	Not suitable to a depth of 22 inches; poor to not suitable between 22 and 46 inches.	Poor to a depth of 22 inches; fair between 22 and 46 inches.	Good to a depth of 22 inches; fair to good between 22 and 46 inches.	Fair	Very poor to not suited to a depth of 22 inches; poor to very poor between 27 and 46 inches.	Poor.

TABLE 5.—*Engineering*

Soil series and map symbols	Degree of limitation and chief limiting factors for—						
	Septic tank filter fields	Sewage lagoons	Landscaping and gardening	Picnic areas and golf fairways	Playgrounds	Paved streets, airport runways, and parking areas	Highway location
Loring: LoC2	Severe: moderately slow permeability; slight wetness.	Moderate on slopes of 3 to 5 percent.	Slight: low fertility; acid.	Slight	Moderate on slopes of 3 to 5 percent.	Moderate on slopes of 3 to 5 percent; fair subgrade material.	Moderate: fair traffic-supporting capacity.
Mamou: MaB	Severe: moderate wetness; slow permeability.	Slight on slopes of 0 to 2 percent; moderate on slopes greater than 2 percent.	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: Moderate wetness.	Moderate: moderate wetness; poor to fair subgrade material; high shrink-swell potential in upper subsoil.	Moderate: moderate wetness; fair traffic-supporting capacity; high shrink-swell potential in upper subsoil.
McKamie: McE	Severe: very slow permeability.	Moderate on slopes of 3 to 8 percent; severe on slopes greater than 8 percent.	Moderate to severe: low fertility; acid; clayey subsoil; slope, where greater than 5 percent.	Moderate: somewhat poor trafficability because of clay subsoil.	Moderate on slope of 8 to 15 percent; somewhat poor trafficability because of clay subsoil; severe on slopes greater than 15 percent.	Severe: Poor subgrade material; slopes, where greater than 3 percent.	Severe: poor traffic-supporting capacity; high shrink-swell potential in subsoil.
Messer Mapped only in complex with soils of Caddo series.	Severe: slow permeability; slight wetness.	Moderate: fair site material at a depth of 0 to 31 inches.	Moderate: low fertility; acid; slight wetness.	Slight	Moderate: slow permeability; slight wetness; slopes, where greater than 2 percent.	Moderate: fair subgrade material; slight wetness.	Moderate: poor to fair traffic-supporting capacity; slight wetness.
Midland: Md	Severe: very slow permeability; severe wetness; floods in some areas.	Slight	Severe: severe wetness; clayey texture somewhat difficult to work; acid; floods in some areas.	Severe: severe wetness; poor trafficability because of clayey texture; floods in some areas.	Severe: severe wetness; poor trafficability because of clayey texture; floods in some areas.	Severe: severe wetness; poor subgrade material; floods in some areas.	Severe: severe wetness; poor traffic-supporting capacity; floods in some areas; high shrink-swell potential in subsoil.
Moreland: Mo	Severe: very slow permeability; severe wetness; floods in some areas.	Slight	Severe: severe wetness; clay texture difficult to work; alkaline; floods in some areas.	Severe: severe wetness; poor trafficability; soil cracks during dry periods; floods in some areas.	Severe: severe wetness; poor trafficability; cracking during dry periods; floods in some areas.	Severe: severe wetness; poor subgrade material; floods in some areas; high shrink-swell potential.	Severe: severe wetness; poor traffic-supporting capacity; floods in some areas.
Mowata: Mt	Severe: very slow permeability; severe wetness; floods in some areas.	Slight	Severe: severe wetness; acid; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; poor subgrade material; may flood in some areas.	Severe: severe wetness; fairly low traffic-supporting capacity.
*Muskogee: MuD2 For McKamie part of MuD2, see McKamie series.	Severe: slow permeability.	Moderate on slopes of 3 to 8 percent.	Moderate: low fertility; acid.	Slight	Moderate on slopes of 3 to 6 percent; severe on slopes greater than 6 percent.	Severe: poor to fair subgrade material; poor traffic-supporting capacity.	Moderate to severe: fair traffic-supporting capacity; high shrink-swell potential in lower subsoil.

interpretations—Continued

Degree of limitation and chief limiting factors for—Continued		Soil features affecting land grading or shaping	Suitability as a source of—						
Reservoir areas	Foundations for dwellings and low buildings		Highway subgrade material (road fill)	Road subbase material	Embankment material for earth dams or levees			Soil material for cement base	Topsoil
					Shell	Core	Homogenous		
Moderate: moderately slow permeability; topography generally favors dam-type ponds.	Slight	Slope where greater than 3 percent.	Fair	Poor to a depth of 5 inches; not suitable between 5 and 23 inches; poor to not suited between 23 and 60 inches.	Fair	Poor to a depth of 5 inches; good between 5 and 23 inches; fair to good between 23 and 60 inches.	Fair	Poor to a depth of 5 inches; very poor between 5 and 23 inches; poor to very poor between 23 and 60 inches.	Good.
Slight: generally too nearly level for dam-type ponds.	Moderate: moderate wetness; high shrink-swell potential in upper subsoil.	Moderate wetness; somewhat difficult to work.	Fair	Poor to a depth of 11 inches; not suitable between 11 and 19 inches; very poor to not suited between 19 and 64 inches.	Fair to a depth of 11 inches; fair to poor between 11 and 19 inches; fair between 19 and 64 inches.	Fair to a depth of 11 inches; good between 11 and 64 inches.	Fair	Poor to very poor.	Fair.
Slight: generally favors dam-type ponds.	Severe: high shrink-swell potential in subsoil.	Clay subsoil difficult to work; slopes, where greater than 3 percent.	Poor	Poor to a depth of 3 inches; not suitable between 3 and 70 inches.	Fair to a depth of 3 inches; poor between 3 and 70 inches.	Fair to a depth of 3 inches; good between 3 and 70 inches.	Fair	Fair to a depth of 3 inches; very poor between 3 and 70 inches.	Poor.
Slight: generally too nearly level for dam-type ponds.	Moderate: slight wetness.	Slight wetness	Fair	Poor to a depth of 31 inches; not suitable to poor between 31 and 63 inches.	Fair	Fair to a depth of 31 inches; good to fair between 31 and 63 inches.	Fair	Fair to a depth of 31 inches; very poor to poor between 31 and 63 inches.	Good.
Slight: too nearly level for dam-type ponds.	Severe: high shrink-swell potential; severe wetness; floods in some areas.	Severe wetness; texture and wetness limit working time; difficult to work.	Poor	Not suitable	Fair to a depth of 5 inches; poor between 5 and 57 inches.	Good	Fair	Very poor	Poor.
Slight: too nearly level for dam-type ponds.	Severe: severe wetness; very high shrink-swell potential; floods in some areas.	Severe wetness; clayey texture difficult to work.	Poor	Not suitable	Poor to a depth of 40 inches; poor to fair between 40 and 54 inches.	Good	Fair	Very poor to not suited.	Poor.
Slight: suitable for water impoundment; too nearly level for dam-type ponds.	Severe: high shrink-swell potential below a depth of 23 inches; floods in some areas.	Severe wetness; wetness limits working time.	Poor	Poor to a depth of 23 inches; not suitable between 23 and 60 inches.	Poor to a depth of 23 inches; fair between 23 and 60 inches.	Poor to a depth of 23 inches; fair between 23 and 60 inches.	Poor to a depth of 23 inches; fair between 23 and 60 inches.	Poor to a depth of 23 inches; very poor between 23 and 60 inches.	Fair.
Slight: generally favors dam-type ponds.	Moderate: high shrink-swell potential in lower subsoil.	Slopes, where greater than 3 percent; clayey subsoil difficult to work.	Fair to poor.	Poor to a depth of 6 inches; not suitable between 6 and 58 inches.	Fair to poor	Fair to a depth of 6 inches; good between 6 and 58 inches.	Fair	Fair to a depth of 6 inches; very poor between 6 and 58 inches.	Fair in upper 22 inches; poor below 22 inches.

TABLE 5.—*Engineering*

Soil series and map symbols	Degree of limitation and chief limiting factors for—						
	Septic tank filter fields	Sewage lagoons	Landscaping and gardening	Picnic areas and golf fairways	Playgrounds	Paved streets, airport runways, and parking areas	Highway location
Olivier: OlB2	Severe: moderate wetness; slow permeability.	Slight to moderate: fair site material.	Moderate: moderate wetness; low fertility; acid.	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: moderate wetness; fair subgrade material.	Moderate: moderate wetness; fair traffic-supporting capacity.
*Patoutville: PaB2, Pc. For Crowley part of Pc, see Crowley series.	Severe: moderate wetness; slow permeability.	Slight	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: moderate wetness; poor to fair subgrade material.	Moderate: moderate wetness; fair traffic-supporting capacity.
Perry: Pe	Severe: flooding; very slow permeability; severe wetness.	Slight: severe if floodwaters are deep.	Severe: flooding; severe wetness; difficult to work; acid.	Severe: flooding; severe wetness; subject to cracking during dry periods; poor trafficability.	Severe: flooding; severe wetness; subject to cracking during dry periods; poor trafficability.	Severe: flooding; severe wetness; poor subgrade material; difficult to work.	Severe: flooding; severe wetness; very poor traffic-supporting capacity.
Ruston: RuC, RuD	Slight on slopes of 1 to 5 percent; moderate on slopes of 5 to 8 percent.	Moderate: moderate permeability.	Slight to moderate: low fertility; acid.	Slight	Slight on slopes of 0 to 2 percent; moderate on slopes of 2 to 6 percent; severe on slopes greater than 6 percent.	Slight on slopes of 0 to 6 percent; moderate on 6 to 8 percent slopes.	Slight on slopes of 0 to 6 percent; moderate on slopes greater than 6 percent.
Savannah: SaB	Severe: moderately slow permeability; slight wetness.	Slight to moderate.	Moderate: low fertility; slight wetness; acid.	Slight	Moderate: slight wetness; slope, where greater than 3 percent.	Moderate: slight wetness; fair subgrade material; slope, where greater than 3 percent.	Moderate: fair traffic-supporting capacity; slight wetness.
*Tenot: TeB, Th. For Calhoun part of Th, see Calhoun series.	Severe: slow permeability; moderate wetness.	Slight on slopes of 0 to 2 percent; moderate on slopes of 2 to 3 percent.	Moderate: moderate wetness.	Moderate: moderate wetness.	Moderate: moderate wetness; slow permeability; slope, where greater than 2 percent.	Moderate: fair subgrade material; moderate wetness; high shrink-swell potential in upper subsoil.	Moderate: fair traffic-supporting capacity; moderate wetness; high shrink-swell potential in upper subsoil.
Vidrine. Mapped only with Crowley and Wrightsville soils.	Severe: slow permeability; moderate wetness.	Slight	Moderate: moderate wetness; fairly low fertility; clayey subsoil.	Moderate: moderate wetness.	Moderate: moderate wetness; slow permeability.	Severe: high shrink-swell potential in subsoil; poor subgrade material; moderate wetness.	Severe: high shrink-swell potential in subsoil; poor to fair traffic-supporting capacity; moderate wetness.
*Wrightsville: Wv. For Vidrine part of Wv, see Vidrine series.	Severe: very slow permeability; severe wetness; floods in some areas.	Slight	Severe: severe wetness; low fertility; acid; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; floods in some areas.	Severe: severe wetness; poor subgrade material.	Severe: severe wetness; poor traffic-supporting capacity; floods in some areas.

interpretations—Continued

Degree of limitation and chief limiting factors for—Continued		Soil features affecting land grading or shaping	Suitability as a source of—						
Reservoir areas	Foundations for dwellings and low buildings		Highway subgrade material (road fill)	Road subbase material	Embankment material for earth dams or levees			Soil material for cement base	Topsoil
					Shell	Core	Homogenous		
Slight: may be too nearly level for dam-type ponds.	Moderate: moderate wetness.	Moderate wetness.	Fair	Poor to a depth of 5 inches; not suitable between 5 and 65 inches.	Fair	Fair to good	Fair	Poor to very poor.	Fair.
Slight: generally too nearly level for dam-type ponds.	Moderate: moderate wetness; moderate shrink-swell potential in subsoil.	Moderate wetness; somewhat difficult to work.	Fair	Poor to a depth of 7 inches; not suitable between 7 and 57 inches.	Fair	Fair to a depth of 7 inches; good between 7 and 56 inches.	Fair	Poor to very poor.	Fair.
Slight: too nearly level for dam-type ponds.	Severe: flooding; very high shrink-swell potential; severe wetness.	Flooding; severe wetness; difficult to work.	Poor	Not suitable	Poor	Good to fair	Fair to poor	Very poor to not suitable.	Poor.
Moderate: seepage may be excessive, especially for dugout ponds.	Slight on 0 to 6 percent slopes; moderate on slopes greater than 6 percent.	Slopes, where greater than 3 percent.	Fair to good	Poor to fair to a depth of 15 inches; not suitable between 15 and 56 inches.	Fair to a depth of 15 inches; good between 15 and 56 inches.	Fair to a depth of 15 inches; good between 15 and 56 inches.	Fair to a depth of 15 inches; good to fair between 15 and 56 inches.	Good to fair to a depth of 15 inches; poor to very poor between 15 and 56 inches.	Fair.
Slight: some areas too nearly level for dam-type ponds.	Moderate: slight wetness.	Slight wetness; slopes, where greater than 3 percent.	Poor to fair	Poor to not suitable between depths of 7 to 85 inches.	Fair	Fair to a depth of 7 inches; good between 7 and 85 inches.	Fair	Fair to a depth of 7 inches; poor to very poor between 7 and 85 inches.	Fair.
Slight: generally too nearly level for dam-type ponds.	Severe: moderare wetness; high shrink-swell potential in upper subsoil.	Moderate wetness; somewhat difficult to work.	Fair	Poor to a depth of 13 inches; not suitable between depths of 13 and 63 inches.	Fair to a depth of 13 inches; fair to poor between 13 and 63 inches.	Fair to a depth of 13 inches; good between 13 and 63 inches.	Fair	Poor to very poor.	Fair.
Slight: generally too nearly level for dam-type ponds.	Severe: moderate wetness; high shrink-swell potential in subsoil.	Moderate wetness; clayey subsoil difficult to work.	Fair	Poor at variable depths to 27 inches; not suitable between 27 and 72 inches.	Fair at variable depths to 27 inches; poor to fair between 27 and 72 inches.	Fair at variable depths to 27 inches; good between 27 and 72 inches.	Fair	Poor at variable depths to 27 inches; very poor between 27 and 72 inches.	Fair.
Slight: generally too nearly level for dam-type ponds.	Severe: severe wetness; high shrink-swell potential in subsoil.	Severe wetness; low shear strength; high compressibility; high shrink-swell potential in subsoil.	Poor	Poor to not suitable to a depth of 18 inches; not suitable between 18 and 46 inches.	Fair to a depth of 18 inches; poor to fair between 18 and 46 inches.	Fair to a depth of 18 inches; good between 18 and 46 inches.	Fair	Poor to very poor to a depth of 18 inches; very poor to not suitable between 18 and 46 inches.	Fair.

The AASHO system (*1*) is used to classify soils according to those properties that affect use in highway construction. In this system all soil material is classified in seven principal groups. The groups range from A–1, which consists of soils that have the highest bearing strength and are the best soils for subgrade, to A–7, which consists of soils that have the lowest strength when wet. Within each group, the relative engineering value of the soil material is indicated by a group index number. The numbers range from 0, for the best material, to 20, for the poorest. The group index number is shown in parentheses following the soil group symbol in table 3.

In the Unified system (*10*) soils are classified according to their texture and plasticity and their performance as engineering construction material. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soil, identified as Pt. The symbols for clean gravels are GP and GW, and GM and GC are gravels that include, respectively, an appreciable amount of nonplastic and plastic fines. The symbols for clean sands are SP and SW. The symbols SM and SC identify sands that include fines of silt and clay. Symbols ML and CL identify silts and clays that have a low liquid limit, and MH and CH are silts and clays that have a high liquid limit. Soils on the borderline between two classes are designated by symbols for both classes, for example, ML–CL.

Soil scientists use the USDA textural classification (*7*). In this system, the texture of the soil is determined according to the proportion of soil particles smaller than 2 millimeters in diameter, that is, the proportion of sand, silt, and clay. Textural modifiers, such as gravelly, stony, shaly, and cobbly, are used as needed.

Table 3 shows the AASHO and Unified classification of specified soils in the survey area as determined by laboratory tests. Table 4 shows the estimated classification of all the soils in the area according to all three systems of classification.

Engineering test data

The Louisiana Department of Highways tested the major layers of several soils in this parish. The results of these tests, which were made in accordance with standard procedures, are given in table 3. The soils were sampled to a depth of about 5 feet, and the data, therefore, are not adequate for estimating the characteristics of the soils in deeper cuts.

The mechanical analyses were obtained by the combined hydrometer and sieve method. The test for liquid limit and plastic limit measures the effect of water on the consistence of the soil material. A dry, clayey soil material, for example, changes from a semisolid to a plastic state when the moisture content is increased. As the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the material passes from a semisolid to a plastic state. The liquid limit is the moisture content at which the material passes from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which the material is in a plastic state.

In construction work, engineers are conc[illegible] o with shrink-swell potential, moisture-density [illegible] l dispersion of soil materials. As moisture leaves [illegible] e soil decreases in volume in proportion to t[illegible] n moisture until a point is reached where the [illegible] stops, even though additional moisture is ren[illegible] volume difference between a moist and dry s[illegible] e shrink-well potential.

Moisture density or compaction data are important in earthwork, for the soil generally is most stable if it is compacted to about the maximum dry density at approximately the optimum moisture content. If a dry soil material is compacted at successively higher moisture content, assuming the compactive effort remains constant, the density of the material will increase until the optimum moisture content is reached. After that, the density decreases as the moisture content increases. The highest dry density obtained in the compaction test is termed maximum dry density, and the corresponding moisture content is the optimum moisture. A tolerance of 95 to 100 percent of the maximum dry density is specified in many earthwork contracts. Therefore, the percentage of moisture of the material to be compacted can vary, provided 95 percent of maximum dry density is exceeded when the material is compacted.

Dispersion refers to the degree and speed with which soil structure breaks down or slakes in water. A highly dispersed soil is one that sloughs readily, is highly erodible on slopes, and has low shear strength and high piping potential. Basile, Frost, and Guyton soils, for example, have a high dispersion rate.

Estimated properties

Table 4 gives estimates of the properties of each mapping unit. These estimates were based on the results of laboratory tests shown in table 3, on tests made of similar soils in adjacent parishes, on field observations, and on the behavior of the soils in the parish. A detailed description of each mapping unit and information about the range in characteristics and the inclusions of other soils can be found in the section "Descriptions of the Soils." The column headings in table 4 that were not explained in the discussion of table 3 are explained in the following paragraphs. The estimated properties in table 4 are for the representative profile, therefore, some variation from these must be expected.

USDA texture is determined by the relative proportions of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. Sand, silt, clay, and some of the other terms used in the USDA textural classification are defined in the Glossary of this report.

Reaction refers to the degree of acidity or alkalinity of a soil. It is expressed in pH values.

Permeability refers to the rate at which water moves through an undisturbed soil. The estimates were based on the structure and porosity of the soils and the permeability tests of undisturbed cores of similar soils. Permeability of the underlying material in a soil controls the rate of seepage and is the major soil feature to be considered in locating sites for ponds and reservoirs. Permeable soils, such as Kenney, Ruston, and Dossman, are not

suitable for ponds and reservoirs unless they are treated to reduce seepage.

Available water capacity refers to the capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Shrink-swell potential indicates the volume change that will occur when a soil changes in moisture content. Much damage to building foundations, roads, and other structures is caused by the shrinking and swelling of soils as a result of alternate wetting and drying. This quality depends on the physical properties or characteristics of the soil. Moreland clay has a very high shrink-swell potential, and the clayey subsoil of the Crowley soils, for example, has a high shrink-swell potential. These soils are high in content of montmorillonitic clay. They are very sticky when wet and develop extensive shrinkage cracks as they dry. Ruston soil, which is low in clay content and nearly nonplastic, has a low shrink-swell potential.

Flood hazard refers to the risk of flooding as a result of stream overflow, runoff from adjacent areas, or local accumulation. Since the soils affected and the depth and duration of floods vary considerably with the severity of each rainstorm, the ratings shown in table 4 for flood hazard are intended only for general guidance. Local records should be relied upon for a more accurate estimate of the overflow hazard for any particular soil. The hazard is no more than slight for soils that are not subject to flooding or that are flooded less than once in 15 years. The hazard is moderate if the soil is flooded at least once in 15 years, and it is severe if the soil is flooded one or more times each year. The overflow hazard is none to slight for such soils as Gallion, Dossman, and Olivier. It is severe for such soils as Cascilla, Basile, and Perry, frequently flooded. Deep drainage ditches in low areas help to protect some soils and may reduce the overflow hazard.

Corrosivity potential refers to the risk of corrosion of untreated steel pipe and concrete as a result of physical and biochemical action. Among the factors that cause corrosion are moisture, soluble salts, electrical conductivity, acidity, texture, and drainage (*9*).

Wetness hazard ratings are based on estimates of the length of time that free water stays in a soil after the saturation point has been reached. The degree of wetness is expressed as slight, moderate, and severe.

Engineering interpretations

In the first part of table 5, the soils of this parish are rated according to degrees of limitations for use as residential and recreational areas, paved streets, landing strips for airplanes, parking areas, foundations for low buildings, highway location, and reservoir areas. The chief limiting factors that affect these uses are shown. The next column in the table lists features that affect land grading or shaping. In the last part, the soils are rated according to their suitability as a source of various construction materials.

Considered in rating limitations for use for dwellings and low buildings were shrink-swell potential, wetness, flood hazard, piping potential, and slope. The permeability, wetness, flood hazard, and slope were considered in rating limitations for use as septic tank filter fields. Slope, quality of embankment material, permeability, and flood hazard were considered in rating limitations for use as sewage lagoons. Flood hazard, wetness, texture, available water-holding capacity, natural fertility, reaction, and slope were considered in rating limitations for landscaping and gardening. Wetness, flood hazard, trafficability, cracking, ease of establishing sod, and slope were considered in rating limitations for use as picnic areas, playgrounds, and golf fairways. Slope, quality of subgrade material, workability, flood hazard, and wetness were considered in rating limitations for paved streets, airport runways, and parking areas. Seepage rate and topography were considered in selecting pond reservoir areas.

Slight limitations are those that are easy to tolerate or overcome. Moderate limitations are those that need to be recognized but can be tolerated or overcome by practicable means. Severe limitations are those that are somewhat difficult or costly to overcome. Very severe limitations are those that are so restrictive that use of the soil for the particular purpose listed generally is not practicable.

Wetness, slope, flood hazard, and workability are the features that affect land grading or shaping.

The suitability of a soil for use as material for subgrade or road fill depends largely on the texture and the water content. Very plastic soils that are high in natural water content are difficult to handle, to dry, and to compact. The Moreland and Perry clays, for example, have a high shrink-swell potential and are rated poor.

Reservoir areas, farm pond embankments (dams), or levees are constructed of one *homogenous* soil or with a *core* of impervious material and a *shell* of less desirable material. These three uses of soil material have different property requirements and therefore receive different weight when rating soil material for placement into suitability classes. The rating criteria are based on rolled earthen dams or levees. Embankment criteria, as related to the Unified Classification System, are used to place soil material in limitation classes of slight, moderate, and severe. The factors considered are (1) shear strength, (2) compaction characteristics, (3) permeability (when compacted), (4) compressibility (compacted and saturated), (5) resistance to piping, and (6) workability as construction material. Permeability is not considered for shell material. The degrees of limitation are based on a weighted average of the effect that the various soil properties of each Unified class have on the desirability of soil material for use in embankments.

For core, the soil material must be relatively impervious when placed and compacted in the center (core) part of the embankment. It may or may not be good for other parts of the embankment.

For shell, the soil material must have shear strength and stability when used as a shell. It does not need to be impervious but may be good for other parts of the dam.

For homogenous, the soil material must have adequate shear strength and stability, resistance to erosion, and be relatively impervious when used as a homogenous embankment.

Soil cement-base material is used to mix with Portland cement for highway subbase and for slope protection against wave action on dams and other embankments

exposed to wave action. Suitability ratings are based on percent of cement needed to produce soil cement that will withstand many freeze-thaw and wet-dry cycles without deterioration. Generally, a well-graded silty sand that has less than 35 percent passing the number 200 sieve is the best. Soils that have a high content of clay are less desirable.

The soils that are rated good as a source of topsoil material respond well to management designed to establish and maintain good turf. These soils normally have a thick layer of loamy material and are fairly high in organic-matter content. Soils that have a thin or clayey surface or a seasonal high water table are rated as a poor source of topsoil material.

Good soil for construction or foundation material is somewhat limited in Evangeline Parish. Suitable subbase material for highway construction may be found underlying the Prairie surface in the southern part of the parish, but it is at extreme depths. Sand and chert gravel is found in a few places deep beneath the Montgomery terrace in the northern part of the parish. A few large areas are being mined near Turkey Creek. Shallow deposits of sands are present in some areas of Ruston and Kenney soils.

Most farm ponds in the northern part of the parish are constructed by building a dam across a natural drain. In the southern part of the parish, where the soils are nearly level, ponds are constructed by excavation.

Formation and Classification of the Soils

In this section the factors and processes of soil formation are described and the system of soil classification now in use is explained.

Factors of Soil Formation

The characteristics of each soil are determined by (1) the physical and mineralogical composition of the parent material, (2) the climate under which the soil material has accumulated and existed since accumulating, (3) the living organisms in and on the soil, (4) the relief, and (5) the length of time the forces of soil development have acted on the soil material.

Climate and living organisms are the active factors in soil formation. They act on the parent material and slowly change it into a natural body that has genetically related horizons. The effects of climate and living organisms are conditioned by relief. The nature of the parent material affects the kind of profile that forms. Finally, time is essential for the changing of parent material into a soil profile.

Interrelations of the factors of soil forming are so complex that few generalizations can be made about one factor unless conditions are specified for the other four.

Parent material

Parent material is the unconsolidated mineral mass from which soils form. The nature of the parent material influences the physical, chemical, and mineralogical composition of the soils. It also influences the degree of leaching, the reaction, texture, permeability, and drainage, and it helps to determine the kind of surface and subsoil layers.

Differences in texture in parent material are accompanied by differences in chemical and mineralogical composition. Sandy material is high in quartz content and low in feldspar and ferromagnesian minerals. The Kenney soils are examples of the influence of parent material. These soils formed in sandy material that has undergone weathering for a long time; yet, no clay accumulation is evident in the subsoil because there is only a small amount of weatherable minerals in the parent material that provides a source for clay movement. The McKamie soils are many thousands of years old; they formed from clayey parent material. The Kenney and McKamie soils occur on adjacent landscapes and similar landforms and are subjected to approximately the same intensity of each soil-forming factor, but their parent material is different. Thus, the nature of the parent material has been a major cause of the differences in the two soils.

The soils in Evangeline Parish developed from loess of two different ages and from alluvial sediment. The age of the deposits ranges from early Pleistocene to Recent. The old alluvial deposits of the Bentley and Montgomery terraces are parent material for the Kenney, Ruston, and Savannah soils and for most of the Caddo, Guyton, and Glenmora soils.

The Caddo and Glenmora soils in this survey area may have the influence of a thin blanket of windblown material in their surface layer. The texture of the parent material ranges from the fine sand of Kenney soils to the light sandy clay loam of Ruston and Savannah soils and the silt loams and silty clay loams of Caddo, Glenmore, and Guyton soils. The Montgomery terrace occurs in the northwestern part of the parish. The Bentley terrace protrudes from the Montgomery terrace as small round hills and outcroppings along the major streams of the area.

Messer soils formed in the loamy material that occurs as small circular mounds on the level and nearly level parts of the Montgomery terrace.

The older silty or loess deposit completely covers the Montgomery terrace in the north-central and northeastern part of the parish and is the parent material for the Calhoun, Dossman, Duralde, Evangeline, Frost, and Tenot soils. The texture of this parent material is silt loam.

Duralde soils formed from the silt loam material that occurs as small circular mounds on the loess-mantled part of the Montgomery terrace.

In the southern part of the parish, deltaic alluvial deposits of the Prairie Formation are parent material of the Acadia, Crowley, Mamou, Midland, Mowata, Vidrine, and Wrightsville soils. Texture of the parent material is mostly light silty clay loam, but it ranges to clay in places.

Along the eastern border of this survey area, the Crowley, Mowata, and Wrightsville soils were influenced by a thin blanket of loess (*3*). Vidrine soils formed in the loamy material that occurs as small circular mounds on the level and nearly level parts of Prairie terrace. The younger loess covers the eastern part of the Prairie terrace and is the parent material for the Calhoun, Jeanerette, Loring, Olivier, and Patoutville soils.

The parent materials of the Gallion, Latanier, Moreland, and Perry soils are the deposits of the Red River that were deposited while the river occupied its course in Bayou Cocodrie. The texture of the parent material ranges from very fine sandy loam to clay.

Alluvial deposits from local sources are the parent material for the Basile, Cascilla, Frost, and Guyton soils. The texture of the parent material is mostly silt loam and silty clay loam.

Climate

Evangeline Parish has a warm, humid, subtropical climate characterized by relatively high rainfall. The climate is fairly uniform throughout the parish, which indicates that climate did not cause the local differences in these soils. The climate in this area favors rapid, intensive weathering, and the relatively high rainfall removes the weathered products.

Living organisms

Plants affect the formation of soils by developing a root system in the soil and by adding humus to the soil surface layer in the form of leaves or other plant material that will eventually decompose. Plant roots, though small, force openings in the soil and modify porosity. As they grow, they break up and rearrange the soil particles. When the roots die, they also form humus which is a source of nutrients and an aid in the formation and maintenance of soil structure. Animals, such as crawfish and earthworms, also influence soil formation by burrowing in and mixing the soil. Windthrows also help mix the soil.

Mixed pine and hardwood is the dominant vegetation in the northern part of the parish. Because of rapid decomposition of organic matter, soils in the survey area that formed under trees generally are low in organic-matter content.

The grass vegetation of the southern part of the parish gave the soils of this area an A horizon that is very dark gray like the Jeanerette soils and dark grayish brown like the Crowley soils. Darker colors indicate that a high percentage of organic matter was incorporated into the soil from the grass vegetation.

Relief

Relief, or slope of the landscape, affects soil formation through its influence on drainage, erosion, plant cover, and soil temperature. The relief in Evangeline Parish ranges from level to steep.

Calhoun, Guyton, Caddo, and other gray, poorly drained soils formed in level areas or depressions where water stands or drains away slowly. In these places the soils are saturated for long periods and are poorly aerated. This condition causes reduction of iron compounds and the formation of gray colors. On slopes that have a good drainage, the soils are better drained and aerated and have colors of red, yellow, or brown as a result of the oxidation of iron compounds. Soils associated with Calhoun soils, such as the brown Duralde, the yellowish-red Evangeline, and the red Dossman soils, are in sloping areas; the gray Calhoun soils are in level areas and depressions. Relief is responsible for the major difference in these two kinds of soil.

On steep slopes, relief is the dominant factor affecting the thickness of the soil solum. In places, the soil is removed by geologic erosion nearly as fast as it forms. This prevents the development of a thick soil profile. There are no shallow soils in Evangeline Parish, but the solum in the steep Dossman and McKamie soils is only 2 to 5 feet. The more gently sloping Evangeline and the Duralde soils have a solum thickness of 6 to 8 feet.

Time

The difference in the length of time that parent material has been exposed to the active forces of soil formation is commonly reflected in the degree and kind of development of the soil profile.

The soils of Evangeline Parish range from those that are very young and have little profile development to those that are very old and have well-developed profiles. The youngest parent material in the parish is on the flood plains of some of the present natural drainageways. The oldest parent materials are the hills of the Bentley Formation in the northwestern part of the parish.

The influence of time on soil formation is well illustrated by comparing the profiles of Ruston and Cascilla soils. The Ruston soils developed in the old Bentley terrace sediment and have been subjected to the factors of soil formation for a long period. In these soils, colloidal clays have moved downward from the A horizon to form a highly weathered, strongly developed, and very thick B horizon. Some organic matter has accumulated in the A horizon. In contrast, the Cascilla soils that formed in recently deposited parent material in flood plains along drainageways have not been in place long enough for well-developed horizons to form. They have little or no downward movement of colloidal clays. The only indication of soil development is their brown color and darker colored surface layer. This coloring was caused by the accumulation of organic matter and indicates that the soils have been in place long enough so that aeration has occurred and iron compounds have oxidized to give the soils a brown matrix color.

The influence of time on soil formation is also well illustrated in very similar loess parent material. The Evangeline soils developed in the older loess that has been weathering for many thousands of years. These soils have yellowish-red colors and a very thick B horizon. The Loring soils developed in the younger loess on similarly shaped landforms and have brown colors and a relatively thin B horizon that contains a fragipan. The two different types of horizons and the different colors may indicate a sequence of the kind of development of soil horizons that can occur in similar parent material as influenced by time.

Processes of Soil Formation

The older soils in this parish have distinct horizons, and the young soils have faint horizons. The degree of horizonization is the result of one or more of the following processes: (1) accumulation of organic matter; (2) leaching of soluble carbonates and bases; (3) reduction, solution, and transfer of iron and manganese; and (4) formation and translocation of silicate clay minerals.

Two or more of these processes have influenced the development of horizons in most soils in this parish. For example, an accumulation of organic matter and the reduction and transfer of iron are reflected in the faint horizons of the Perry soils.

Enough organic matter has accumulated to form an A1 horizon in most of the soils in the parish. The most pronounced example is the Jeanerette soils, which developed under grass vegetation. Solution and leaching of carbonates and salts have occurred in nearly all soils in the parish, but the degree of leaching and the extent of influence on horizon development vary. Nearly all soils of the terraces and those of the loesses have been leached of soluble salts and carbonates; they are acid in reaction, at least in the surface layers. The Cascilla soils and some of the Frost and Guyton soils formed in sediment that probably was weathered and leached before it was deposited.

Soils that have an alkaline to calcareous subsoil, such as the Gallion, Jeanerette, Latanier, Moreland, and Perry soils, contain much less calcium carbonates in the surface layer than they once had. Some segregations of calcium carbonates occur at a depth of 10 to 40 inches in nearly all of these soils.

The poorly drained soils in this parish have horizons that developed mainly through reduction, solution, and transfer of iron and manganese, a process called gleization. In soils that are alternately wet and moist, the iron compounds are reduced to a soluble form, and gray colors predominate, primarily because of ferrous iron. If drainage is impeded or the water table is high, anaerobic micro-organisms remove oxygen from the water; this oxygen deficiency results in the reduction of iron and manganese. Iron and manganese may be leached from the soils, or they may rise to the surface of waterlogged soils and form segregated iron and manganese concretions. Iron and manganese concretions are present in all poorly drained and somewhat poorly drained soils in this parish. Gleyed horizons are present in all of the poorly drained soils.

The formation and translocation of silicate clay minerals have contributed to horizon development in all soils of the parish except the younger soils on the flood plains, such as the Cascilla soils. In the process, clay and iron compounds are removed from the uppermost soil layers. The bleached, light-colored A2 horizon of the Basile, Crowley, Mowata, and Wrightsville soils is an example of an eluviated horizon from which iron compounds and clay have been removed. In many soils in the parish, a B2t horizon has formed through the accumulation of translocated colloids or sesquioxide clays. The B2t horizon generally is finer textured than the A1, Ap, and A2 horizons. Crowley silt loam, for example, has an Ap and A2 horizon of silt loam, a B2t horizon of silty clay, and a C horizon of silty clay loam. A more obvious evidence of the downward movement of clay is the presence of clay films on the structural surfaces in the B2t horizon of many soils. Ruston, Gallion, Evangeline, and Dossman soils are other good examples of soils that have a well-developed B2t horizon in which clay films are on the ped surfaces.

Classification of the Soils

Classification consists of an orderly grouping of soils according to a system designed to make it easier to remember soil characteristics and interrelationships. Classification is useful in organizing and applying the results of experience and research. Soils are placed in narrow classes for discussion in detailed soil surveys and for application of knowledge within farms and fields. The many thousands of narrow classes are then grouped into progressively fewer and broader classes in successively higher categories, so that information can be applied to large geographic areas.

Two systems of classifying soils have been used in the United States in recent years. The older system was adopted in 1938 (*2*) and revised later (*5*). The system currently used by the National Cooperative Soil Survey was developed in the early sixties (*4*) and was adopted in 1965 (*8*). It is under continual study.

The current system of classification has six categories. Beginning with the most inclusive, these categories are the order, the suborder, the great group, the subgroup, the family, and the series. The criteria for classification are soil properties that are observable or measurable, but the properties are selected so that soils of similar genesis are grouped together. The placement of some soil series in the current system of classification, particularly in families, may change as more precise information becomes available.

Table 6 shows the classification of each soil series of the parish by family, subgroup, and order, according to the current system.

Following are brief descriptions of each of the categories in the current system.

ORDER: Ten soil orders are recognized in the current system. They are Entisols, Vertisols, Inceptisols, Aridisols, Mollisols, Spodosols, Alfisols, Ultisols, Oxisols, and Histosols. The orders are primarily broad climatic groupings. Two exceptions are the Entisols and Histosoils. These soils formed under grass vegetation where the gain of organic matter was greater than the loss; some found in dark, clayey, recent alluvial sediment.

Inceptisols are young soils in which horizons are developed just well enough to be recognized. Instead of textural B horizons, Inceptisols have colored B horizons. In this parish, Inceptisols occur on active flood plains. They were formerly called Alluvial soils.

Mollisols are soils that have thick, very dark gray or very dark grayish-brown A1 horizons and high base subsoils. These soils were formed under grass vegetation where the gain of organic matter was greater than the loss; some are found in dark, clayey, recent alluvial sediment.

Alfisols have a clay-enriched B horizon that is relatively high in bases. Included in this order are some soils that were formerly called Planosols, Low-Humic Gley soils, Gray-Brown Podzolic soils, and Solodized Solonetz soils.

Ultisols are extremely weathered or have formed from extremely weathered parent material. They are acid and low in bases. Many of the soils in this order were formerly called Red-Yellow Podzolic soils.

SUBORDER: Each order is divided into suborders, primarily on the basis of those soil characteristics that seem

to produce classes having the greatest genetic similarity. The suborders have a narrower climatic range than the orders. The soil properties used to separate suborders reflect mainly the presence or absence of waterlogging or differences resulting from the climate or vegetation.

GREAT GROUP: Each suborder is divided into great groups, which are based on uniformity in kind and sequence of the major soil horizons and features. The horizons considered in making these separations are those that contain illuvial clay, iron, and humus; those that have a thick, dark-colored surface layer; and those in which a fragipan interferes with water movement and root development. The features considered are the self-mulching properties of some clays, the tonguing of an eluvial horizon into an illuvial horizon, and wide differences in the content of bases. The great groups are not shown separately in table 6 because they are identified by the last word in the name of the subgroup.

SUBGROUP: Great groups are divided into subgroups, one representing the central (typic) segment of the group, and others, called intergrades, that have properties of one great group and also one or more properties of another great group, suborder, or order. Subgroups may also be recognized in instances where soil properties intergrade outside the range of any other great group, suborder, or order.

FAMILY: Families are established within a subgroup primarily on the basis of properties important to the growth of plants, or behavior of soils where used for engineering purposes or related residential and industrial purposes. Among the properties considered are texture, mineralogy, reaction, soil temperature, permeability, consistence, and thickness of horizon.

SERIES: The series has the narrowest range of characteristics of the catagories in the classification system. It is explained in the section "How This Survey Was Made." The 32 soil series in Evangeline Parish are classified as shown in table 6.

A detailed description of each soil series in the parish is given in the section "Description of the Soils."

General Nature of the Parish

Evangeline Parish was established in 1911 from the original St. Landry Parish. The parish area was first under Spanish rule in the middle and late parts of the 1700's. People of Spanish descent settled along old Spanish roads in the Ville Platte area and Bayou Chicot area during this period.

The present population of 31,510 is principally of French ancestry in the southern part of the parish and of English descent in the northern part. Ville Platte, the parish seat and largest city, had a population of 7,512 in 1960. It was incorporated in 1858. It is located about 50 miles south of Alexandria, 45 miles north of Lafayette, 65 miles west of Baton Rouge, 140 miles northwest of New Orleans, and 200 miles east of Houston, Tex.

TABLE 6.—*Classification of the soils*

Series	Family	Subgroup	Order
Acadia	Fine, montmorillonitic, thermic	Aeric Ochraqualfs	Alfisols.
Basile	Fine-silty, mixed, thermic	Typic Glossaqualfs	Alfisols.
Caddo	Fine-silty, siliceous, thermic	Typic Glossaqualfs	Alfisols.
Calhoun [1]	Fine-silty, mixed, thermic	Typic Glossaqualfs	Alfisols.
Cascilla	Fine-silty, mixed, thermic	Fluventic Dystrochrepts	Inceptisols.
Crowley	Fine, montmorillonitic, thermic	Typic Albaqualfs	Alfisols.
Dossman	Fine-silty, mixed, thermic	Ultic Hapludalfs	Alfisols.
Duralde	Fine-silty, mixed, thermic	Fragic Glossudalfs	Alfisols.
Evangeline	Fine-silty, mixed, thermic	Haplic Glossudalfs	Alfisols.
Frost	Fine-silty, mixed, thermic	Typic Glossaqualfs	Alfisols.
Gallion	Fine-silty, mixed, thermic	Typic Hapludalfs	Alfisols.
Glenmora	Fine-silty, siliceous, thermic	Glossaquic Paleudalfs	Alfisols.
Guyton	Fine-silty, siliceous, thermic	Typic Glossaqualfs	Alfisols.
Jeanerette	Fine-silty, mixed, thermic	Typic Argiaquolls	Mollisols.
Kenney sandy subsoil variant	Loamy, mixed, siliceous thermic	Grossarenic Paleudalfs	Alfisols.
Latanier	Clayey over loamy, mixed, thermic	Vertic Hapludolls	Mollisols.
Loring	Fine-silty, mixed, thermic	Typic Fragiudalfs	Alfisols.
Mamou	Fine-silty, mixed, thermic	Aeric Albaqualfs	Alfisols.
McKamie	Fine, mixed, thermic	Vertic Hapludalfs	Alfisols.
Messer	Coarse-silty, siliceous, thermic	Haplic Glossudalfs	Alfisols.
Midland	Fine, montmorillonitic, thermic	Vertic Ochraqualfs	Alfisols.
Moreland	Fine, mixed, thermic	Vertic Hapludolls	Mollisols
Mowata	Fine, montmorillonitic, thermic	Typic Glossaqualfs	Alfisols.
Muskogee	Fine-silty, mixed, thermic	Aquic Paleudalfs	Alfisols.
Olivier	Fine-silty, mixed, thermic	Aquic Fragiudalfs	Alfisols.
Patoutville	Fine-silty, mixed, thermic	Aeric Ochraqualfs	Alfisols.
Perry	Very fine, montmorillonitic, nonacid, thermic	Vertic Haplaquepts	Inceptisols.
Ruston	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Savannah	Fine-loamy, siliceous, thermic	Typic Fragiudults	Ultisols.
Tenot	Fine-silty, mixed, thermic	Aeric Albaqualfs	Alfisols.
Vidrine	Coarse-silty over clayey, mixed, thermic	Glossaquic Hapludalfs	Alfisols.
Wrightsville	Fine, mixed, thermic	Typic Glossaqualfs	Alfisols.

[1] The Calhoun soils in mapping units Cn and Th are taxadjuncts to the Calhoun series. Both have a calcium-magnesium ratio of less than 1. Also, the Calhoun soils in unit Cn have fewer weatherable minerals than the range defined for the Calhoun series.

The broad natural prairies, mostly in the southern part of the parish, were first used for livestock grazing, but the usage soon changed to the production of rice and cotton. The wooded areas in the northern part of the parish furnish timber products. The production from the oilfields and gasfields in the parish adds greatly to the economy of the area.

The population of the parish is about 50 percent urban and suburban and 50 percent rural. In 1964, the rural population actively engaged in farming was estimated at 9,299.

Major industries located in the parish include a carbon black company, a sweetpotato canning company, rice driers, a wood preservative company, a few small petroleum companies, and pumping stations.

The Louisiana Mineral Yearbook shows that the parish had an income of $13,607,637 in 1967 from petroleum, natural gas, natural gas liquids, and sand and gravel.

Recreation areas include Chicot State Park, Louisiana State Arboretum, and various lakes and streams for fishing, swimming, boating, and skiing.

Farming

Evangeline Parish is primarily a farming parish; about half the acreage is in crops.

The total number of farms in the survey area has decreased from 2,706 in 1959, to 2,313 in 1964, according to the U.S. Census of Agriculture. The total farmland acreage increased from 215,806 in 1959 to 233,734 in 1964. The average size of cultivated farms increased from about 80 acres in 1959 to about 100 acres in 1964.

In 1964 a total of 43,241 acres was planted to rice, by far the dominant crop. There were 12,593 acres of cotton, 5,654 acres of sweetpotatoes, 3,261 acres of soybeans, and 4,759 acres of corn.

The 233,734 acres of cropland in the parish yielded crops valued at $10,718,506 in 1964. In 1964 there were 50,199 head of cattle including calves.

Average yields of rice per acre increased from about 70 bushels in 1962 to about 100 bushels green-weight in 1964.

Physiography

Evangeline Parish has three major physiographic areas: the level to nearly level terraces of the Prairie Formation; the gently sloping terraces of the Montgomery and Bentley Formations; and the level and nearly level recent flood plains.

The level to nearly level areas of the Prairie Formation are in the southern half of the parish. This area rises abruptly about 40 feet above the Mississippi and Red River Valley floor. The escarpment area is highly dissected by gullies that empty into the river valley. Only a small part of the drainage area of the Prairie Formation drains into the river valley. The Prairie Formation dips to the southwest, and drainage is through Mermentau River watershed.

Loess deposits cover the eastern edge of the Prairie Formation of Evangeline Parish (*3*). The loess soils are agriculturally important to the parish.

The other soils of the Prairie Formation are those that have a clayey subsoil. They are on natural prairies and wooded drainageways. Most of these soils are used for rice production. Elevations of this formation range from about 80 feet on the northeastern edge to about 40 feet near the southwest corner of the parish.

The gently sloping areas of the Montgomery Formation make up most of the northern half of the parish. This area rises about 40 feet above the Prairie Formation and is 80 to 100 feet above the river valley floor. The escarpment into the river valley is steep and highly dissected by gullies. The escarpment to the Prairie Formation is gently sloping and has no significant erosion. Nearly all of the Montgomery Formation drains southward to the Prairie Formation and then southwestward to the Mermentau River watershed.

Thick, loess deposits cover the eastern half of the Montgomery Formation (*6*). Some of these loess soils are important to farming in the parish, but most of the acreage is woodland. The western half of the Montgomery Formation is more sandy, and the area is known as the cutover, longleaf pine flatwoods. Elevations of the Montgomery Formation range from 140 feet near the valley wall in the northeastern part to about 70 feet in the southwest corner of the formation in this parish.

The sandy Bentley Formation outcrops along deeply entrenched streams in the northwestern part of the parish. The largest exposed area of this formation is along Cocodrie Lake. Smaller areas of the formation protrude from a nearly level Montgomery Formation. The soils of the Bentley Formation are sandy and have a reddish subsoil.

Small rounded knolls, about 75 feet in diameter and 1 to 2 feet in height, are common on the level and nearly level parts of the Prairie and Montgomery Formations. These knolls are known locally as mounds or pimple mounds. They formed as a result of some geological process, but scientists are unable to agree on the origin. In most cultivated fields the mounds have been smoothed.

The level and nearly level flood plains in the northeastern corner make up about 10 percent of the parish area. The loamy and clayey sediments were deposited primarily by the Red River when it occupied the present Bayou Cocodrie channel.

Natural levees are important landscape features adjacent to Bayou Cocodrie. They are low ridges which flank both sides of the bayou that periodically overflowed its banks before the Red River abandoned it. Since the coarsest and greatest quantities of sediment are deposited closest to the channels, the natural levees are at the highest local elevations and gradually slope away from the channels. These loamy soils dip under the clay deposits as distance from the bayou increases. Gallion soils are on natural levees and are choice farmlands.

The natural levee on the west side of Bayou Cocodrie sealed off drainage from the hills forming rimswamps, lakes, and breaks, such as Lake Cocodrie and Hubbard Break. Several large areas of clayey soils at low elevations between the bayou and the hill are flooded frequently. Elevations of the river valley range from 35 to 60 feet.

Bayou Nezpique and Bayou des Cannes drain about 80 percent of Evangeline Parish. These bayous are tributar-

ies to the Mermentau River, which drains directly into the Gulf of Mexico. The other 20 percent of the parish drains into the river valley through the Atchafalaya Basin and then to the Gulf of Mexico.

Climate [5]

Evangeline Parish has a warm, humid, subtropical climate characterized by relatively high rainfall. An average rainfall of more than 4 inches occurs in every month except September and October. Summers are hot and humid. The prevailing winds are from the Gulf of Mexico. The maximum temperature is at least 90° F. or higher on about 83 percent of the days in July and August, but temperatures higher than 100° are rare. Winters are usually mild. An average of only 19 days each year have a minimum temperature of 32° or lower. Moist, tropical air from the south, and dry polar air from the north alternate in winter. Extremely cold weather seldom lasts for more than 3 or 4 days at a time. Table 7 gives temperature and precipitation data for the parish.

The average date of the first temperature of 32° or lower in autumn is November 19, and the average date of the last in spring is February 27. The growing season is about 265 days.

The average annual rainfall is 57.5 inches. Rainfall generally is sufficient for growing a wide variety of cultivated crops and pasture plants, but the amount in some years is inadequate during some periods and excessive in others. Generally, rainfall is in the form of showers. Prolonged rains are infrequent and usually occur in winter. Warm, moist air favors thunderstorms in summer. Heavy rains, usually of short duration, are caused by the remnants of tropical cyclones.

Snow is not common. Amounts of 4 to 8 inches have fallen in January or February, but measurable amounts are rare. Damaging hail is infrequent and occurs only in localized areas in spring and fall.

Relative humidity averages 77 percent at Alexandria, the observing station closest to the parish. It is usually highest at night and lowest in the afternoons. Humidity is 80 percent or higher about half the time and is less than 50 percent about an eighth of the time. The lowest relative humidity, under 25 percent, occurs in winter after an influx of cold air.

About 40 percent of the days are cloudy, 30 percent are clear, and the rest are partly cloudy. Cloud cover averages slightly less in summer than in winter.

Average windspeed is less than 10 miles per hour, and strong, persistent winds are unusual. Locally damaging high winds have been associated with cold fronts in winter, thunderstorms in spring and summer, and with dissipating tropical cyclones in autumn.

Water Supply [6]

In Evangeline Parish large quantities of fresh ground water can be produced from the Chicot aquifer, and small to moderate quantities can be produced from the underlying Evangeline aquifer.

The Chicot aquifer consists mainly of sand and gravel and ranges in thickness from about 50 feet in the northern part of the parish to 350 feet in the southern part. In the central part of northeastern Evangeline Parish, however, the aquifer is only about 30 feet thick. Most of the aquifer is overlain by silt and clay, and the water is mostly under artesian or semiartesian conditions. The potential yield of a properly constructed and developed,

[5] Prepared by GEORGE W. CRY, climatologist for Louisiana National Weather Service, U.S. Department of Commerce.

[6] Information on ground water and surface water in this section was furnished by the U.S. DEPARTMENT OF INTERIOR, Geological Survey, Water Resources Division.

TABLE 7.—*Temperature and precipitation data*

[All data from ESSA Weather Bureau cooperative station at Ville Platte, La., for the period 1931–68]

Month	Temperature				Precipitation		
	Average daily maximum	Average daily minimum	Average maximum	Average minimum	Average total	One year in 10 will have—	
						More than—	Less than—
	°F.	°F.	°F.	°F.	In.	In.	In.
January	62	42	77	24	5.4	9.3	2.0
February	65	44	78	27	4.6	7.8	1.7
March	71	49	83	32	4.6	7.6	1.5
April	79	57	88	40	5.0	9.1	1.2
May	86	64	93	53	5.1	9.4	1.3
June	91	70	97	62	4.9	9.2	1.5
July	92	72	98	67	5.7	10.3	1.6
August	93	72	98	63	4.6	8.2	1.5
September	89	67	96	54	3.9	7.4	1.3
October	82	56	91	40	3.1	7.0	0.3
November	71	47	84	30	4.4	9.0	1.4
December	64	43	78	26	6.2	10.2	3.0
Year	79	57	[1] 100	[2] 21	57.5	72.4	45.0

[1] Average annual highest temperature. [2] Average annual lowest temperature.

large-diameter well that is screened in the thicker and coarser part of the aquifer is 4,000 gallons per minute or more.

Because the water is generally a hard, calcium bicarbonate type high in content of iron, it commonly needs treatment to make it suitable for domestic consumption. In the southern part of the parish, the majority of rural inhabitants obtain water from the Chicot aquifer.

The uses of water from the Chicot aquifer in Evangeline Parish and the average quantity pumped in millions of gallons per day are as follows: irrigation, 130; industrial, 3.7; rural-domestic, 0.95; public supply, 0.64; and livestock, 0.17.

Annual water-level fluctuations in the Chicot aquifer in the northern part of Evangeline Parish are small because here the aquifer is quickly recharged and not heavily pumped for irrigation. The water level near Bayou Chicot is approximately 50 feet below land surface. In the southern part of Evangeline Parish, withdrawals for irrigation are heavy, and seasonal water-level fluctuations are large. The average yearly decline of water levels for the period 1962–69 was about 2.5 feet near Mamou, 1 foot near Ville Platte, and 0.5 foot near Turkey Creek. This decline is primarily attributed to increased withdrawals for irrigation.

The Evangeline aquifer underlies the Chicot aquifer and consists of alternating beds of clay and very fine to medium sand. Approximately half of this unit is sand and half is clay interbedded with thin beds of lignite. Typically, individual sand beds in the aquifer are less than 40 feet in thickness. Depth to the top of the aquifer ranges from about 150 feet in the northern part of the parish to about 600 feet in the southern part. The thickness ranges from approximately 700 feet in the northern part to approximately 2,200 feet in the extreme southern part where the lower half of the aquifer contains salty water. Properly constructed and developed wells, screened in the more permeable thick sands, yield as much as 1,000 gallons per minute.

The Evangeline aquifer produces a soft, sodium bicarbonate type of water, which generally has a low content of iron and requires little or no treatment. However, in the eastern half of the parish, water in some of the upper sands of the aquifer contains iron concentrations greater than 0.3 milligram per liter and requires treatment for domestic or public supply. Also, water from some sands in this same area may contain fluoride concentrations that exceed the limits set by the U.S. Public Health Service for drinking water. In the east-central part of the parish, some of the water has an amber color, which is caused by organic compounds in solution.

The uses of ground water from the Evangeline aquifer in this parish and the average quantity pumped in millions of gallons per day are as follows: public supply, 0.89; industrial, 0.30; and rural-domestic, 0.11. The present quantity of ground water pumped from this aquifer for irrigation and livestock is very small.

Water levels in the Evangeline aquifer generally are less than 100 feet below the land surface. They fluctuate seasonally but do not have an annual regional decline. Lowering of water levels occurs only locally in areas where water pumping is heavy.

Evangeline Parish has an abundant supply of surface water. Electrical power generation is the largest single use of surface water, and about 288 million gallons per day was pumped for this purpose from Bayou Cocodrie in 1968. About 95 percent of this water was returned to Bayou Cocodrie. Surface water is also used for irrigation (an average of 17.3 million gallons per day in 1968), recreation, and industrial uses. Livestock consumed about 390,000 gallons per day during 1968. None of the public supply systems in Evangeline Parish use surface water.

The three largest lakes in the parish are Cocodrie Lake, 4,800 acres in area; Millers Lake, 3,000 acres; and Chicot Lake, 1,625 acres. These lakes, in addition to the bayous, creeks, and smaller lakes, offer excellent recreational facilities.

Literature Cited

(1) American Association of State Highway Officials.
1961. standard specifications for highway materials and methods of sampling and testing. Ed. 8, 2 v., illus.

(2) Baldwin, Mark, Kellogg, Charles E., and Thorp, James.
1938. soil classification. U.S. Dept. Agr. Ybk., pp. 979–1001, illus.

(3) Daniels, R. B., and Young, K. K.
1968. loess in south-central louisiana. Southeastern Geol., v. 9, pp. 9–19.

(4) Simonson, Roy W.
1962. soil classification in the united states. Sci. 137: 1027–1034, illus.

(5) Thorp, James, and Smith, Guy D.
1949. higher categories of soil classification: order, suborder, and great soil groups. Soil Sci. 67: 117–126.

(6) Touchet, B.A., and Daniels, R.B.
1969–70. a post-montgomery pre-prairie age loess near ville platte, louisiana.

(7) United States Department of Agriculture.
1951. soil survey manual. U.S. Dept. Agr. Handbook No. 18, 503 pp., illus.

(8) ———
1960. soil classification, a comprehensive system, 7th approximation. 265 pp., illus. [Supplements issued in March 1967 and in September 1968]

(9) United States Department of Commerce.
1968. underground corrosion. National Bureau of Standards Cir. 579, pp. 7–13, illus.

(10) United States Department of Defense.
1968. unified soil classification system for roads, airfields, embankments and foundations. MIL-STD–619B, 30 pp., illus.

Glossary

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Calcareous soil. A soil containing enough calcium carbonate (often with magnesium carbonate) to effervesce (fizz) visibly when treated with cold, dilute hydrochloric acid.

Chiseling. Tillage of soil with an implement having one or more soil penetrating points that loosen the subsoil and bring clods to the surface. A form of emerging tillage to control soil blowing.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of clay on the surface of a soil aggregate. Synonyms: Clay coat, clay skin.

Claypan. A compact, slowly permeable soil horizon that contains more clay than the horizon above and below it. A claypan is commonly hard when dry and plastic or stiff when wet.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrations of compounds, or of soil grains cemented together. The composition of some concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are examples of material commonly found in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Drainage class (natural). Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and the C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and some soils commonly have mottling at a depth below 6 to 16 inches.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Diversion, or diversion terrace. A ridge of earth, generally a terrace, that is built to divert runoff from its natural course and, thus, to protect areas downslope from the effects of such runoff.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants, when other growth factors such as light, moisture, temperature, and the physical condition of the soil are favorable.

Flood plain. Nearly level land, consisting of stream sediments, that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic-matter content and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to relatively level plots surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops, or in orchards, to confine the flow of water to one direction.

Furrow.—Water is applied in small ditches made by cultivation implements used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Irrigation water, released at high points, flows onto the field without controlled distribution.

Loess. Fine-grained material, dominantly of silt-sized particles, that has been deposited by wind.

Mottling, soil. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of 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 these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Mound. A geological formation consisting of a small, rounded knoll about 75 feet in diameter and 1 to 2 feet in height on level to nearly level Prairie and Montgomery Formations; often referred to as a mima mound or pimple mound.

Munsell notation. A system for designating color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with a hue of 10YR, a value of 6, and a chroma of 4.

Permeability. The quality that enables the soil to transmit water or air. Terms used to describe permeability are as follows: *Very slow, slow, moderately slow, moderate, moderately rapid, rapid,* and *very rapid.*

pH value. A numerical means for designating acidity and alkalinity in soils. A pH value of 7.0 indicates precise neutrality; a higher value, alkalinity; and a lower value, acidity.

Piping. Removal of soil material through subsurface flow channels or "pipes" formed by seepage water.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an

alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	Very strongly alkaline	9.1 and higher

Sand. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

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

Site index. A numerical means of expressing the quality of a forest site that is based on the height of the dominant stand at an arbitrarily chosen age; for example, the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years.

Soil separates. Mineral particles, less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows: *Very coarse sand* (2.0 to 1.0 millimeter); *coarse sand* (1.0 to 0.5 millimeter); *medium sand* (0.5 to 0.25 millimeter); *fine sand* (0.25 to 0.10 millimeter); *very fine sand* (0.10 to 0.05 millimeter); *silt* (0.05 to 0.002 millimeter); and *clay* (less than 0.002 millimeter). The separates recognized by the International Society of Soil Science are as follows: I (2.0 to 0.2 millimeter); II (0.2 to 0.02 millimeter); III (0.02 to 0.002 millimeter); IV (less than 0.002 millimeter).

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes 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 other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. 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 together without any regular cleavage, as in many claypans and hardpans).

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

Subsoiling. Tillage of a soil below normal depth ordinarily to shatter a hardpan or claypan.

Substratum. Technically, the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that it may soak into the soil or flow slowly to a prepared outlet without harm. Terraces in fields are generally built so they can be farmed. Terraces intended mainly for drainage have a deep channel that is maintained in permanent sod.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Topsoil. A presumed fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Variant, soil. A soil having properties sufficiently different from those of other known soils to suggest establishing a new soil series, but a soil of such limited known area that creation of a new series is not believed to be justified.

Water leveling. A method of reshaping the land surface primarily for the contour border irrigation systems used in rice culture. The land is flooded with water to indicate the highs and lows prior to earth moving operations. In the earth moving operations, the floodwater is also used in working the surface layer into a slurry that can be pushed about easily by slightly modified farm type tractors.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. The suitability of the soils for crops and pasture, wildlife, and woodland is explained in the description of each mapping unit. The capability classification system is described on pages 40 and 41. Other information is given in tables as follows:

Acreage and extent, table 1, page 7.
Estimated yields, table 2, page 42.

Uses of the soils in engineering, tables 3, 4, and 5, pages 44 through 57.

Map symbol	Mapping unit	Described on page	Capability unit Symbol
AcB	Acadia silt loam, 1 to 3 percent slopes	7	IIIe-1
Bw	Basile-Wrightsville complex, frequently flooded	8	Vw-1
Ca	Caddo-Messer complex	9	IIIw-1
CaB	Caddo-Messer complex, undulating	10	IIIw-2
Ch	Calhoun silt loam	11	IIIw-3
Cn	Calhoun-Duralde complex	12	IIIw-3
Cs	Cascilla silt loam, frequently flooded	13	Vw-2
Cv	Crowley-Vidrine complex	14	IIIw-4
DoC2	Dossman silt loam, 1 to 5 percent slopes, eroded	15	IIe-1
DsE	Dossman soils, 8 to 30 percent slopes	15	VIe-1
DuB	Duralde silt loam, 1 to 3 percent slopes	16	IIw-1
EvB2	Evangeline silt loam, 1 to 3 percent slopes, eroded	17	IIe-1
EvC2	Evangeline silt loam, 3 to 5 percent slopes, eroded	18	IIIe-2
Fr	Frost silt loam, occasionally flooded	18	IVw-1
Ga	Gallion silt loam	19	I-1
Gc	Gallion silty clay loam	20	IIw-3
GeB	Glenmora silt loam, 1 to 3 percent slopes	21	IIe-2
Gu	Guyton silt loam, occasionally flooded	21	IVw-1
Gy	Guyton-Cascilla complex, frequently flooded	22	Vw-3
Je	Jeanerette silt loam	23	IIw-2
KeE	Kenney fine sand, sandy subsoil variant, hilly	23	VIe-2
La	Latanier clay	24	IIIw-6
LoC2	Loring silt loam, 3 to 5 percent slopes, eroded	25	IIIe-2
MaB	Mamou silt loam, 1 to 3 percent slopes	26	IIw-1
McE	McKamie soils, 8 to 30 percent slopes	27	VIe-3
Md	Midland silty clay loam	28	IIIw-5
Mo	Moreland clay	29	IIIw-6
Mt	Mowata silt loam	30	IIIw-7
MuD2	Muskogee-McKamie complex, 3 to 8 percent slopes, eroded	30	IVe-1
OlB2	Olivier silt loam, 1 to 3 percent slopes, eroded	31	IIw-1
PaB2	Patoutville silt loam, 1 to 3 percent slopes, eroded	32	IIw-1
Pc	Patoutville-Crowley complex	33	IIw-3
Pe	Perry clay, frequently flooded	33	Vw-4
RuC	Ruston fine sandy loam, 1 to 5 percent slopes	34	IIe-3
RuD	Ruston fine sandy loam, 5 to 8 percent slopes	35	IIIe-3
SaB	Savannah very fine sandy loam, 1 to 3 percent slopes	35	IIe-4
TeB	Tenot silt loam, 1 to 3 percent slopes	37	IIw-1
Th	Tenot-Calhoun complex	37	IIIw-3
Wv	Wrightsville-Vidrine complex	39	IIIw-3