United States Department of Agriculture

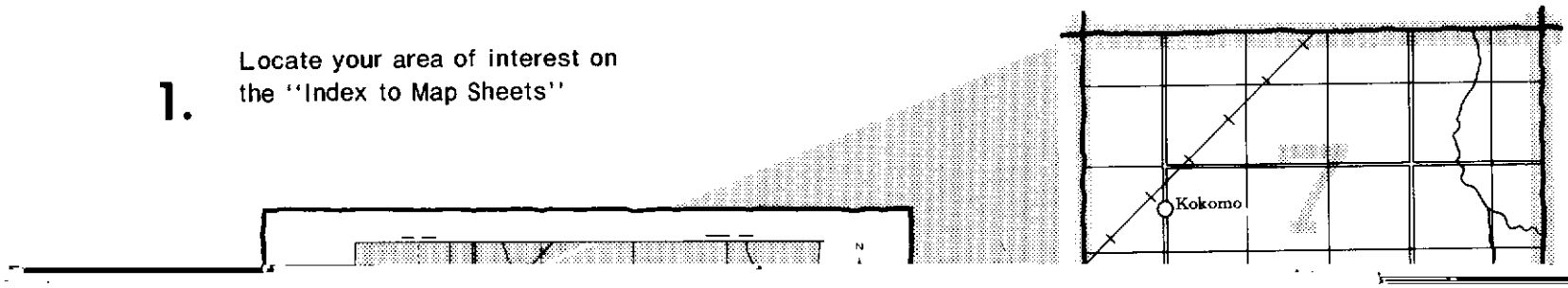
Soil Cons[redacted]

In cooperation with the Louisiana Agricultural Experiment Station and the Louisiana Soil [redacted]

Soil Survey of Morehouse Parish

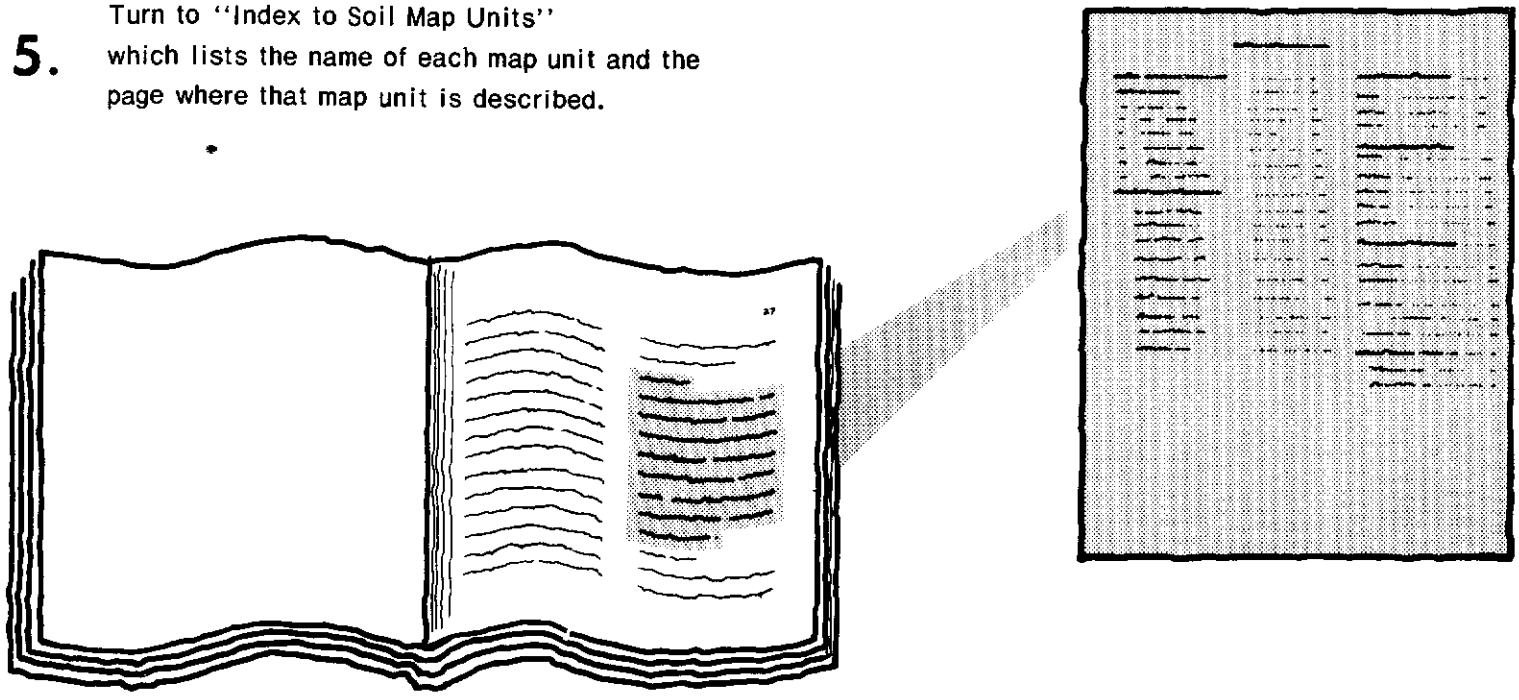
HOW TO USE

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

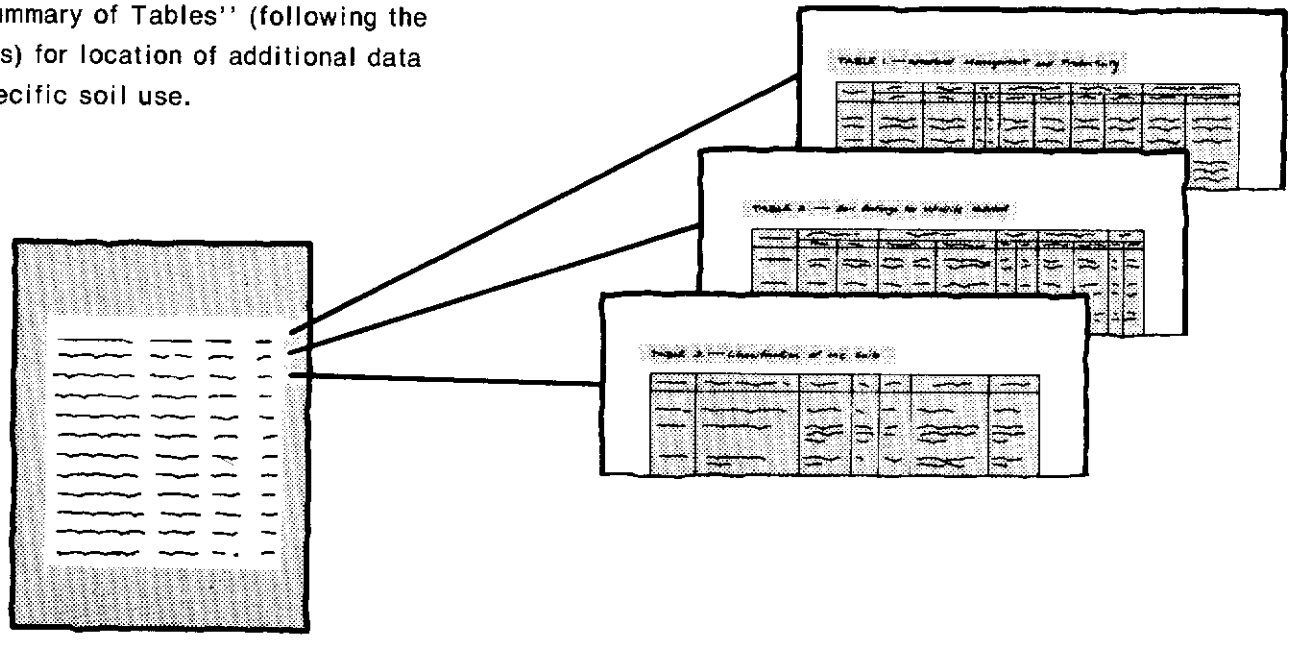


THIS SOIL SURVEY

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



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



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

o Soil Map Units

;ummary of Tables

Foreword

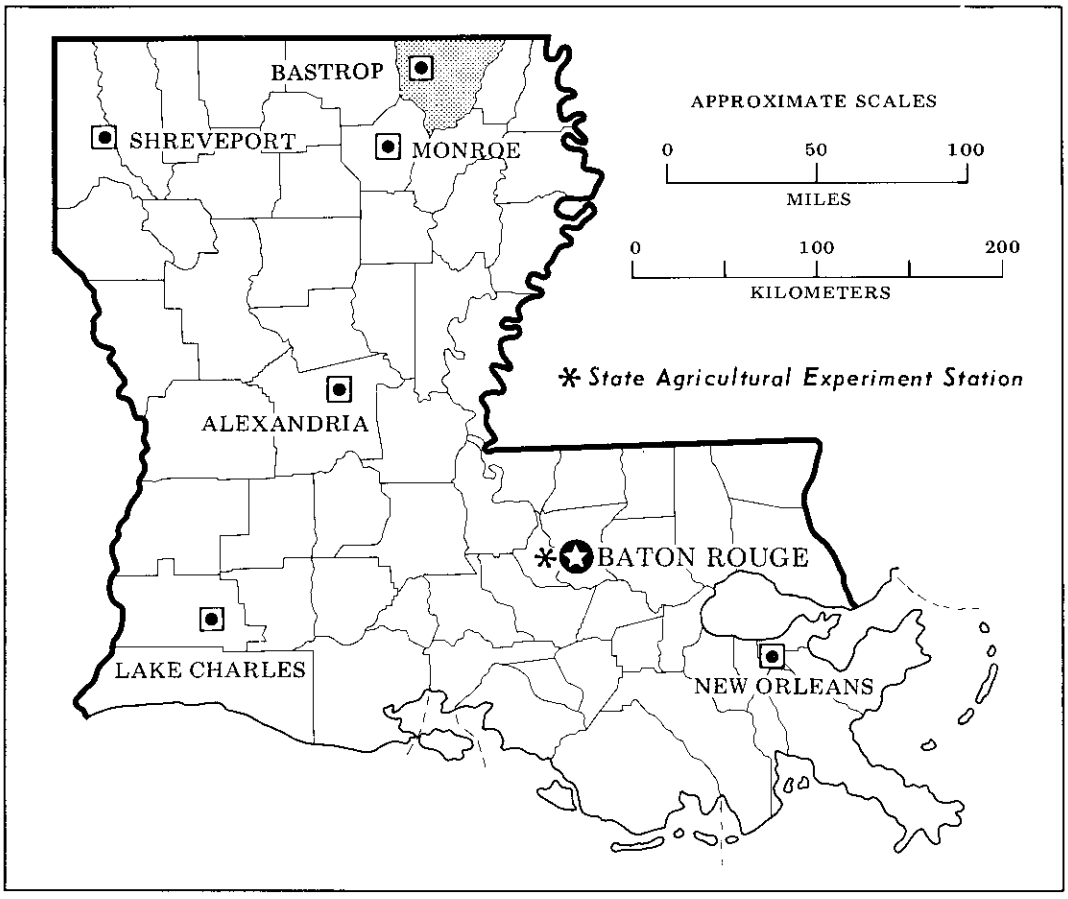
This soil survey contains information that can be used in land-planning programs in Morehouse Parish. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact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

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

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

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

Harry S. Rucker
State Conservationist
Soil Conservation Service



Location of Morehouse Parish in Louisiana.

Soil Survey of Morehouse Parish, Louisiana

By Emmett F. Reynolds, E. Thurman Allen, Teresa L. May, and Tracey A. Weems, Soil Conservation Service

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

Morehouse Parish is in northeastern Louisiana, about 20 miles northeast of Monroe. The total area is 517,379 acres, of which 505,323 acres is land and 12,056 acres is water in the form of lakes, reservoirs, streams, and other waterways. Morehouse Parish is bordered on the north by Arkansas. The Ouachita River forms the western boundary of the parish, the Boeuf River forms the eastern boundary, and Bayou LaFourche forms the southern boundary. In 1980, the population of the parish was 33,760, according to the Bureau of the Census. Bastrop, with a population of 15,401, is the largest city and the parish seat. The parish is mostly rural, except for the urban and industrial area around Bastrop.

The parish consists of three major physiographic areas. They are the level to gently undulating flood plains, the level to moderately sloping terrace uplands, and the level, low stream terraces. The elevation ranges from about 170 feet above sea level on the terrace uplands southeast of Bastrop to about 50 feet in the backswamps of the Ouachita River in the northwestern part of the parish.

The flood plains make up most of the eastern half of the parish and also extend from north to south along the western edge. They make up nearly three-fourths of the parish. The soils on these flood plains range from loamy to clayey and from well drained to very poorly drained. Most of the acreage is in cultivated crops such as rice. A small acreage is used for homesites, pasture, orchards, and woodland. The loamy soils are on the higher, natural levees of rivers and bayous. These soils are fertile and have few limitations for crops. The clayey soils, which are in the lower areas, are limited by wetness. Some of these clayey soils are flooded by runoff and stream overflow, and drainage is needed for most crops.

The terrace uplands extend from north to south through the central part of the parish and make up about one-fifth of the parish. The soils on these uplands are mainly loamy. They are generally low in natural fertility. Most of the acreage is woodland. A small acreage is used for homesites, pasture, and cultivated crops. Wetness is the main limitation for woodland. Slope and low fertility are additional limitations for crops and pasture. The hazard of erosion is slight to severe.

The low stream terraces make up the remainder of the parish and extend from north to south along the edge of the alluvial plains of the Ouachita River in the western part of the parish. The soils on these terraces are mainly loamy, but some have a clayey subsoil. They are low in natural fertility. Most of the acreage is woodland. A small acreage is in cultivated crops and pasture. Wetness is the main limitation for most uses.

General Nature of the Parish

This section gives general information about the parish. It describes the history and development, agriculture, water resources, climate, transportation, and industry.

History and Development

Morehouse Parish was created from Ouachita Parish by the Legislature of Louisiana in 1844. It was named after Abram Morehouse, who came from Kentucky in 1806 to assist Baron de Bastrop in colonizing the area.

ɒn had been given a large grant of land by the Crown, which included the present Morehouse le appointed Morehouse to help settle the

st colony in the parish was about 1-1/2 miles he present town of Mer Rouge. It was named er Rouge. The second settlement of any size ort Jefferson, known today as Oak Ridge. The astrop was named after Baron de Bastrop and is of the old port site of Point Pleasant on Bayou mew. Other communities in the parish include n, Bonita, Collingston, Galion, Log Cabin, Jones, n Oaks.

lture

lture has been the dominant land use in ise Parish since about 1797 when Baron de placed the following notice in a Kentucky ɔer: "I will give to every family, industrious and ɔmmended, 400 acres of land—take where you ." This offer brought settlers who began steadily this wild country and farming the rich alluvial nd soils. Today nearly all of the nonflooded nd soils are farmed. The terrace uplands and ım terraces have, for the most part, been d to pine forest. A small acreage is in row crops ure.

ouse Parish has recently experienced a e in the number of farms and an increase in the size of farms, according to the 1974 Census of re. In 1969 there were 726 farms and in 1974 re 511. The average size increased from 370 1969 to 549 acres in 1974. The total amount of increased from 268,400 acres in 1969 to acres in 1974. The total amount of cropland d from 207,149 acres in 1969 to 227,430 acres

ding to the Morehouse Parish office of the ral Stabilization and Conservation Service, in ɒut 95,151 acres of cotton, 50,120 acres of rice, 03 acres of soybeans were planted. Smaller s of wheat, peanuts, and corn were also planted . Table 1 shows the major crops; acres planted 1977, and 1974; and total yields and yields per 974.

4, about 255 farms maintained 22,050 cattle and n 40,536 acres of pasture and woodland

esent trend in Morehouse Parish appears to be ase in the acreage planted to soybeans. If rends continue, acreage used for woodland will e in the next 20 years as acreage used for increases.

Water Resources

Charles R. Akers, geologist, Soil Conservation Service, helped prepare this section.

Morehouse Parish has supplies of both surface water and ground water. The principal sources of surface water in Morehouse Parish are Bayou Bartholomew, Boeuf River, Bayou Bonne Idee, and Bussy Brake Lake. In 1975, about 62 million gallons per day were removed from these sources (*45*).

According to the Louisiana Stream Control Commission, the quality of the water in the Ouachita River, Bayou Bartholomew, Boeuf River, and Bayou Bonne Idee meets the criteria for recreational uses and for the propagation of fish and wildlife. The Ouachita River and Bayou Bartholomew also are suitable sources for domestic raw water (*18*).

The major ground water aquifers in Morehouse Parish are those in the formations of Pleistocene age and the Cockfield, Cook Mountain, and Sparta Formations of Eocene age. In 1975, about 110 million gallons per day were removed from these aquifers in Morehouse Parish (*18*).

Heavy industrial pumping near Bastrop has lowered the pumping level of wells in the formations of Pleistocene age from approximately 67 feet mean sea level in 1945 to approximately 46 feet mean sea level in 1970 (*44*).

In general, the Pleistocene aquifers are recharged by rainfall infiltration and seepage from streams that cut the Pleistocene age sand above the water table. However, the Boeuf River cuts the Pleistocene age sand below the water table and the aquifer discharges into the river except for short periods when the river is high (*44*).

Although the ground water in the Pleistocene aquifers is mainly of the calcium-magnesium bicarbonate type its quality varies between different topographic positions and parts of the parish. Water from wells in the valley generally contains excessive iron and is very hard; water from wells in the upland areas is low in content of iron, slightly corrosive, and moderately hard. Water from Pleistocene aquifers in the northern part of the parish is of poorer quality than elsewhere. It not only is harder but also contains as much as 680 milligrams of chloride per liter. Some of the Pleistocene water in this area has a high to very high salinity hazard and a low to medium sodium hazard for use as irrigation water (*44*).

The Cockfield Formation ranges in thickness from a few feet in the western part of the parish to about 300 feet in the northeastern part (*44*). The sands that create the aquifer are not connected, and are usually located in the lower part of the formation. In places the Cockfield aquifer is hydraulically connected to an overlying Pleistocene aquifer and the underlying Cook Mountain aquifer. The elevation of the surface of the water in the Cockfield aquifer ranges from about 65 to 95 feet mean sea level. Water from the Cockfield aquifer is used as

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contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

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

Descriptions, names, and delineations of soils in this survey do not fully agree with those in published surveys of adjacent parishes in Louisiana or counties in Arkansas. These differences are the result of better information on soils, modifications in series concepts, intensity of mapping, or the extent of soils within the survey area.

General Soil Map Units

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

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

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

The soils in the survey area vary widely in their suitability for major land uses. Table 5 shows the extent of the map units shown on the general soil map. It lists the suitability of each, in relation to that of the other map units, for major land uses and shows soil properties that limit use. Soil suitability ratings are based on the practices commonly used in the survey area to overcome soil limitations. These ratings reflect the ease of overcoming the limitations. They also reflect the problems that will persist even if such practices are used.

Each map unit is rated for *cultivated crops, pasture, woodland, and urban uses*. Cultivated crops are those grown extensively in the survey area. Pasture refers to land that is producing either native grasses or tame grasses and legumes for livestock grazing. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments.

The boundaries of the general soil map units in Morehouse Parish were matched, where possible, with those of the previously published surveys of Ouachita Parish, La., and Ashley County, Ark. In a few places, however, the lines do not join, and the names of the map units differ. These differences resulted mainly because of changes in soil series concepts, differences in map unit design, and changes in soil patterns near the survey area boundaries. The boundaries of the general soil map units in Morehouse Parish do not match those of the previously published survey of West Carroll Parish, La., because the two parishes are separated by a wide, perennial stream.

Soil Descriptions

Areas dominated by level to gently undulating soils on flood plains

The eight map units in this group consist of loamy, clayey, and sandy soils on the flood plains of rivers, bayous, and small streams that drain the terrace uplands. Slopes range from 0 to 3 percent.

The eight units cover about 73.5 percent of the parish. Most of the acreage is in cultivated crops. Map units that are subject to occasional and frequent flooding are mainly in woodland. Wetness from the seasonal high water table and flooding is the main limitation for most agricultural and urban uses.

1. Hebert-Sterlington-Rilla

Somewhat poorly drained and well drained, level to gently undulating, loamy soils

This map unit consists of soils on broad flats and natural levees along the Boeuf River, Bayou Bonne Idee, and other former channels and distributaries of the Arkansas River. The landscape in most areas is one of long, smooth slopes of 0 to 1 percent. In other areas it is low, parallel ridges and swales that have slopes of 0 to 3 percent.

This unit covers about 27 percent of the parish. It is about 53 percent Hebert soils, 21 percent Sterlington soils, 18 percent Rilla soils, and 8 percent soils of minor extent.

Hebert soils are somewhat poorly drained and have a surface layer of brown silt loam and dark brown silty clay loam. The subsurface layer is light brownish gray, mottled silt loam. The subsoil is silt loam and silty clay loam. It is mottled, reddish gray and grayish brown in the upper part and mottled, reddish brown and brown in the lower part. The underlying material is mottled, reddish brown and brown silt loam and silty clay loam.

Sterlington soils are well drained and have a surface layer of brown, dark brown, and dark yellowish brown silt loam. The subsoil is mainly a brownish silt loam and very

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Litro-Haggerty

orly drained and somewhat poorly drained, level, yey and sandy soils

This map unit consists of soils in backswamps and on mer beaches of relict lakes on the flood plain of the achita River. Manmade levees protect the soils from st floods, but they can be flooded during periods of usually high rainfall. In most areas slopes are long and ooth and range from 0 to 2 percent.

This unit covers about 1.5 percent of the parish. It is out 70 percent Litro soils, 28 percent Haggerty soils, d 2 percent soils of minor extent.

Litro soils are poorly drained and have a surface layer dark gray clay. The subsoil is light gray and light wnish gray, mottled clay.

Haggerty soils are somewhat poorly drained and have surface layer of pale brown, mottled loamy fine sand or ry dark grayish brown and grayish brown, mottled silty y. The subsoil is light brownish gray and yellowish wn, mottled fine sandy loam and loamy fine sand. e underlying material is light gray, mottled sand.

Of minor extent in this unit are the poorly drained oom and Perry soils and the somewhat poorly drained llicy soils. The Groom and Mollicy soils are on jacent, low stream terraces, and the Perry soils are in ckswamps.

The soils making up this unit are used mainly for eat, grain sorghum, rice, and soybeans. In a few small large areas, they are used as woodland.

The soils are poorly suited to cultivated crops and derately well suited to pasture. The main limitations e wetness in spring, droughtiness in fall, low fertility, d high levels of aluminum that are potentially toxic to st crops. The soils are moderately well suited to the duction of hardwood trees. Seedling mortality is a vere hazard, and wetness limits the use of equipment. e soils have good to very poor potential as habitat for tland wildlife and fair potential for woodland and enland wildlife. The soils are poorly suited to urban es. The main limitations are wetness, flooding, high rink-swell potential, and very slow permeability.

Litro-Haggerty, Flooded

orly drained and somewhat poorly drained, level, quently flooded, clayey and sandy soils

This map unit consists of soils in backswamps and on mer beaches of relict lakes on the flood plain of the achita River. The soils are frequently flooded. In most areas, slopes are long and smooth and range from 0 to 2 percent.

This unit covers about 1.5 percent of the parish. It is about 68 percent Litro, flooded, soils; 28 percent Haggerty, flooded, soils; and 4 percent soils of minor extent.

Litro, flooded, soils are poorly drained and have a surface layer of dark gray clay. The subsoil is gray and light brownish gray, mottled clay.

Haggerty, flooded, soils are somewhat poorly drained and have a surface layer of dark grayish brown and grayish brown, mottled loamy fine sand or dark gray and gray, mottled silty clay. The subsoil is mottled, grayish and brownish fine sandy loam and loamy fine sand. The underlying material is light gray, mottled loamy fine sand.

Of minor extent in this unit are the poorly drained Groom and Perry soils and the somewhat poorly drained Mollicy soils. The Groom and Mollicy soils are on adjacent, low, stream terraces. The Perry soils are in backswamps.

The soils making up this unit are mainly in woodland. They are used for timber production and habitat for wildlife.

The soils are moderately well suited to the production of hardwood trees, although wetness and frequent flooding limit the use of equipment. Seedling mortality is a problem. The soils are poorly suited to cultivated crops and pasture. Wetness, flooding, and low fertility are the main limitations. The soils are generally unsuited to urban uses because of the hazard of frequent flooding.

8. Guyton-Cascilla, Flooded

Poorly drained and well drained, level, frequently flooded, loamy soils

This map unit consists of soils in the narrow bottom lands of streams that drain the terrace uplands. The soils are frequently flooded. Slopes range from 0 to 1 percent.

This unit covers about 1.5 percent of the parish. It is about 70 percent Guyton soils, 20 percent Cascilla soils, and 10 percent soils of minor extent.

Guyton soils are poorly drained and have a surface layer of dark grayish brown and light brownish gray silt loam. The subsoil is mottled grayish brown and light brownish gray silt loam and silty clay loam.

Cascilla soils are well drained and have a surface layer of dark brown silt loam. The subsoil is mottled, dark yellowish brown, dark brown, and dark yellowish brown silt loam.

Of minor extent in this unit are the somewhat poorly drained Frizzell, Portland, and Tillou soils and the poorly drained Perry soils. The Frizzell and Tillou soils are on the adjacent terrace uplands, and the Perry and Portland soils are on flood plains.

The soils making up this unit are used mainly as woodland. In a few small areas, they are used as pasture.

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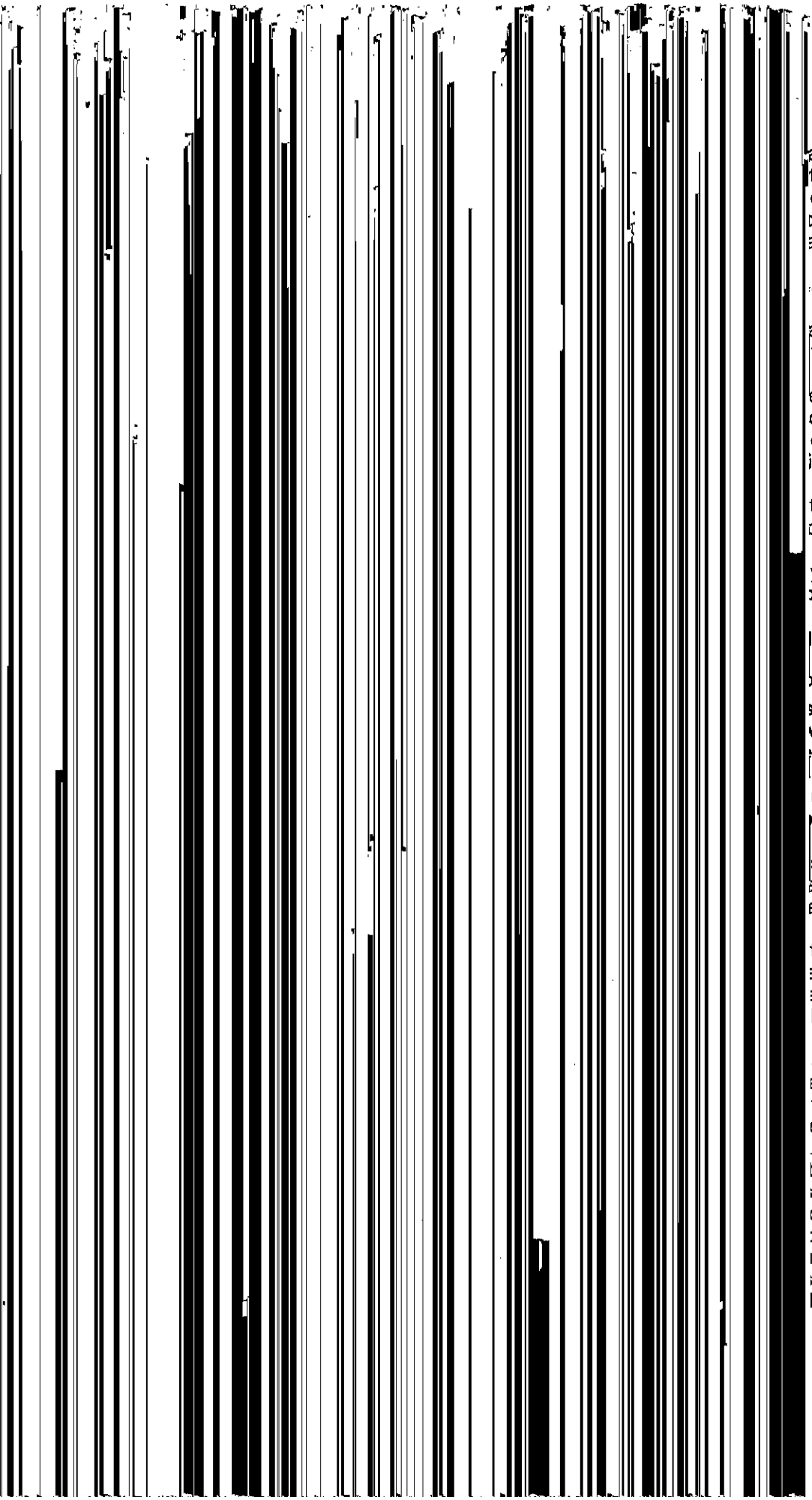

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An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are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

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

Table 6 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and suitabilities for many uses. The Glossary defines many of the terms used in describing the soils.

The boundaries of map units in Morehouse Parish were matched, wherever possible, with those of previously published surveys of Ouachita Parish, La., and Ashley County, Ark. In a few places the lines do not join, and there are some differences in the names of the map units. These differences resulted mainly from changes in soil series concepts, differences in map unit design, and changes in soil patterns near the survey area boundaries. The boundaries of map units in Morehouse Parish were not matched with those of the previously published survey of West Carroll Parish, La., because the two parishes are separated by a wide, perennial stream.

On the detailed soil maps all of the soil areas in Morehouse Parish were mapped at the same level of detail, except for areas of Hebert and Perry soils, frequently flooded, and Udalfs-Bussy association, 5 to 30 percent slopes. Frequent flooding so limits the use and management of the areas of Hebert and Perry soils, frequently flooded, and steep slopes so limit the use of the Udalfs-Bussy association, 5 to 30 percent slopes, that separating each soil would be of little value to the land user. Where flooding or steep slopes is the overriding limitation for present and expected land uses, the individual soils were not mapped separately.

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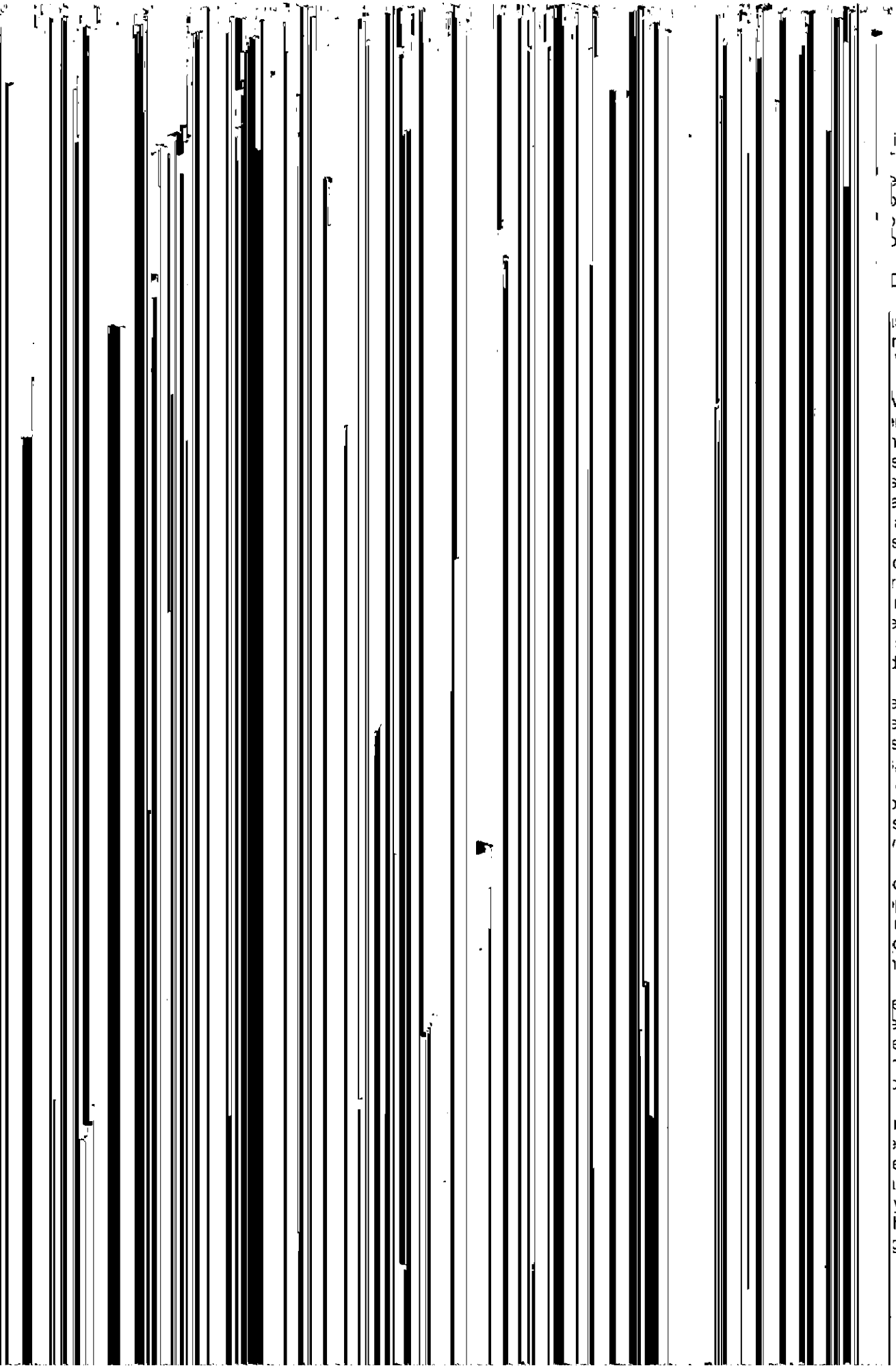

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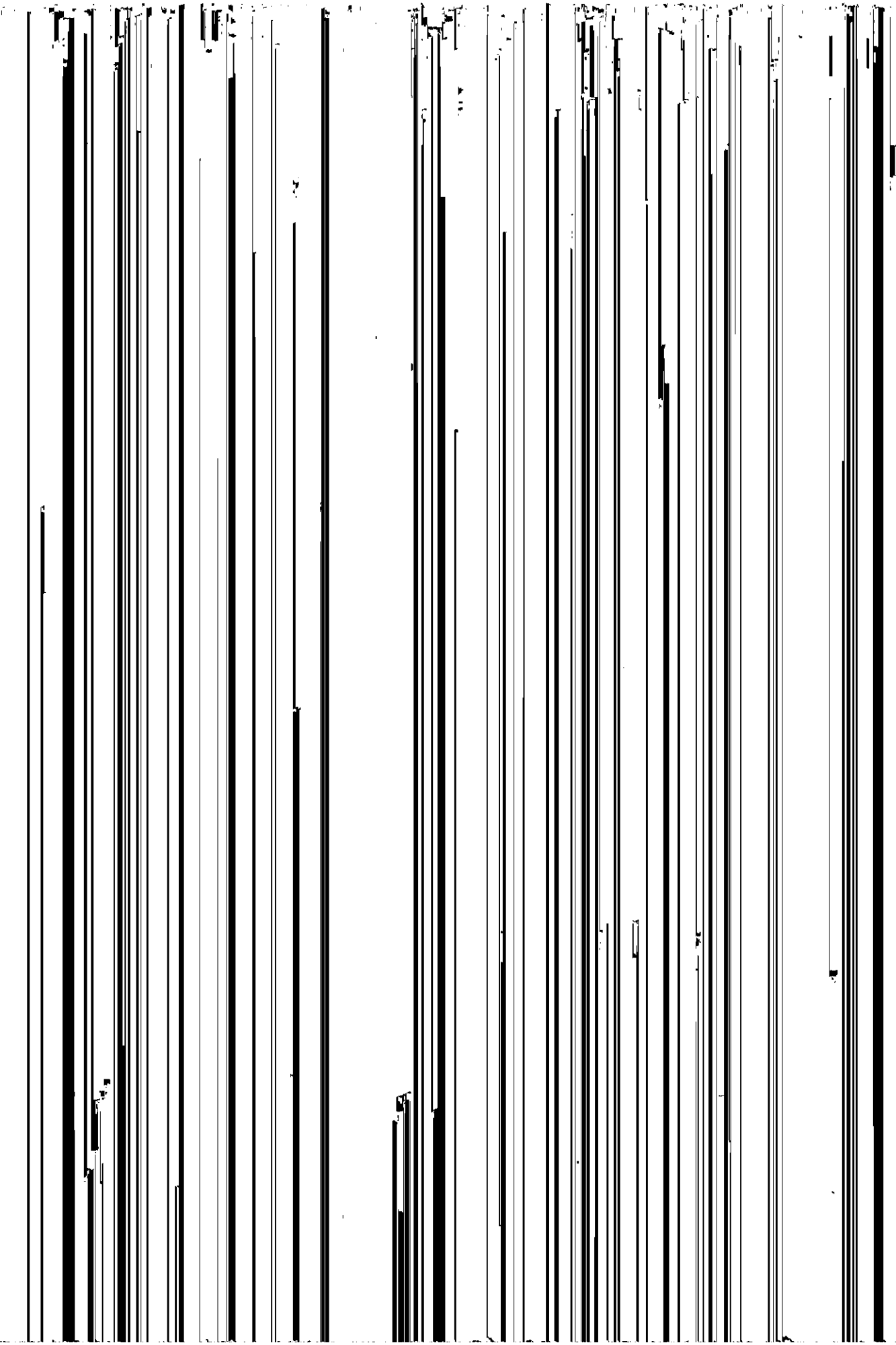

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illion silt loam. This level, well drained soil is
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rtilizers are needed for optimum crop
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il is well suited to pasture. It has few limitations
e. Suitable pasture plants are common bermudagrass, improved bermudagrass, Coastal bermudagrass, Pensacola bahiagrass, johnsongrass, white clover, red clover, vetch, and winter peas. Management is needed that maintains optimum vigor and quality of forage plants. Grazing when the soil is wet results in compaction of the surface layer. Fertilizer and lime are needed for sustained production of high-quality pasture.

This soil is well suited to woodland, but few areas remain in woodland. A few areas are in pecan orchards. This soil has few limitations for producing and harvesting timber. Trees suitable for planting are eastern cottonwood and American sycamore.

This soil has good potential as habitat for openland and woodland wildlife. Habitat for white-tailed deer and squirrels can be improved by planting oak and other mast-producing trees. Habitat for dove, quail, and rabbits can be improved by providing undisturbed, vegetated areas near cropland.

This soil is moderately well suited to building sites, local roads and streets, and most sanitary facilities. The main limitations are moderate shrink-swell potential, moderate permeability, and low strength as it affects local roads and streets. Buildings and roads can be designed to offset the effects of shrinking and swelling and the limited ability of the soil to support a load. Moderate permeability is a limitation for septic tank absorption fields, but this limitation can be overcome by increasing the size of the field.

This soil is well suited to recreational development. It has few limitations for playgrounds, picnic areas, and other recreational uses.

This soil is in capability class I and woodland group 2o4.

Gb—Gallion silty clay loam. This level, well drained soil is in low positions on natural levees bordering Bayou Bartholomew, Bayou Bonne Idee, and other former channels and distributaries of the Arkansas River. Areas range from about 10 to 100 acres. Slopes are dominantly less than 1 percent.

Typically, the surface layer is about 14 inches thick. It is dark yellowish brown, medium acid silty clay loam in the upper part and brown, medium acid silty clay loam in the lower part. The subsoil, to a depth of about 60 inches, is yellowish red, medium acid silt loam in the upper part; yellowish red, slightly acid silty clay loam in the middle part; and reddish brown, mildly alkaline silt loam in the lower part. Small concretions of lime are common in the lower part of the subsoil.

Included with this soil in mapping are a few small areas of Gallion silt loam and Hebert, Mer Rouge, and Portland soils. These areas make up about 15 percent of the unit. The Gallion silt loam is on slightly higher positions. The somewhat poorly drained Hebert soils are in slightly lower positions. The Mer Rouge soils are in slightly lower positions and have a darker surface layer.

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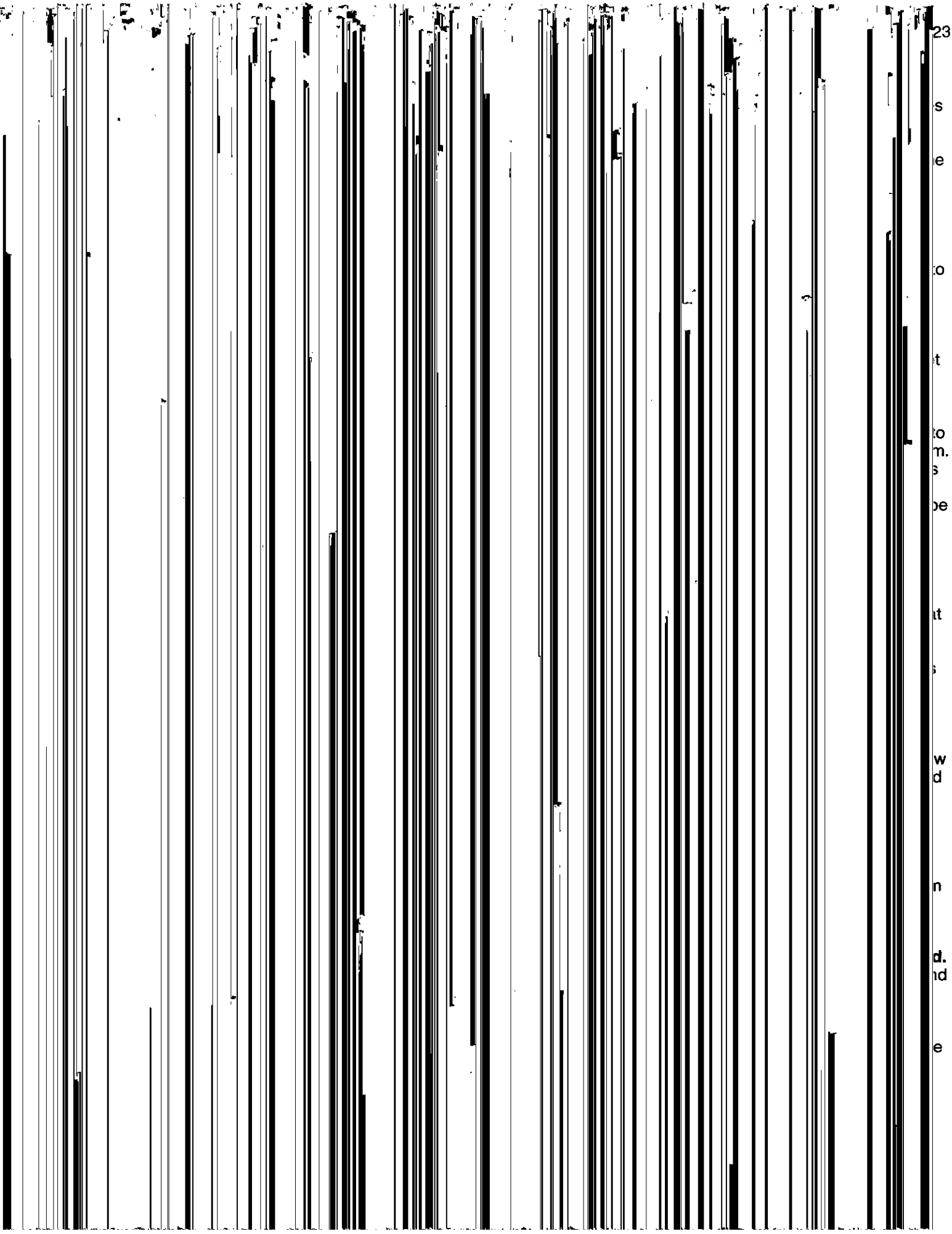

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The soils in this unit are poorly suited to cultivated crops. They are limited mainly by high levels of exchangeable aluminum in the root zone, low fertility, wetness, and occasional flooding. The main crops are rice and small grain. Returning all crop residue to the soil and using a cropping system that includes grasses and legumes help to maintain fertility and tilth. A drainage system is needed for most crops. Crops respond to fertilization and liming programs designed to improve the fertility and overcome the potentially toxic effects of the aluminum in the root zone.

The soils in this complex are moderately well suited to pasture. The main limitations are wetness, flooding, and low fertility. Suitable pasture plants are common bermudagrass, ryegrass, Pensacola bahiagrass, vetch, winter peas, and white clover. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition. During flood periods, cattle should be moved to adjacent protected areas or to pasture at higher elevations.

The soils in this complex are moderately well suited to the production of loblolly pine, water oak, and sweetgum. The main limitations for producing and harvesting timber are wetness and occasional flooding. Reforestation, after harvesting, must be carefully managed to reduce competition from undesirable understory plants. Trees should be water tolerant, and they should be planted or harvested during dry periods. Trees commonly are subject to windthrow during periods when the soils are excessively wet and winds are strong.

The soils in this complex have fair potential as habitat for woodland, openland, and wetland wildlife. They can produce habitat for rabbits, squirrels, white-tailed deer, raccoons, and waterfowl.

The soils in this unit are poorly suited to urban and recreational development. The main limitations are flooding, wetness, moderately slow permeability, and low strength. Large flood-control structures are needed to control flooding. Roads should be designed to offset the limited ability of these soils to support a load.

These soils are in capability subclass IVw. The Groom soils are in woodland group 3w9, and the Mollicy soils are in 3w7.

Gu—Guyton silt loam. This level, poorly drained soil is on broad flats and in depressional areas on terrace uplands. Areas range from about 20 to 800 acres. Slopes are less than 1 percent.

Typically, the surface layer is brown, very strongly acid silt loam about 6 inches thick. The subsurface layer, about 17 inches thick, is light brownish gray, mottled, very strongly acid silt loam. The subsoil extends to a depth of about 60 inches. It is grayish brown, mottled, strongly acid silt loam in the upper part; grayish brown, mottled, strongly acid silty clay loam in the middle part;

and squirrels. Habitat for waterfowl and furbearers can be created by constructing shallow ponds to provide open water areas.

This soil is poorly suited to urban and recreational development. Drainage is needed if roads and building foundations are constructed. Septic tank absorption fields do not function properly during rainy periods because of wetness and slow permeability. Low strength is a limitation where this soil is used for local roads and streets.

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

Gy—Guyton-Cascilla complex, frequently flooded. This complex consists of level, poorly drained Guyton soils and nearly level, well drained Cascilla soils. These soils are on narrow bottom lands of streams that drain terrace uplands and are frequently flooded. The Guyton soils are on flat and concave positions, and the Cascilla soils are on low, narrow ridges that are 1 to 3 feet high and 20 to 60 feet wide. The Guyton soils makes up about 70 percent of the complex, and the Cascilla soils about 20 percent. Areas of these soils are so intermingled that mapping them separately was not practical at the scale selected. Areas of this complex range 50 to 600 acres. The slopes are dominantly less than 1 percent.

Typically, the Guyton soils have a dark grayish brown, strongly acid, silt loam surface layer about 8 inches thick. The subsurface layer is light brownish gray, very strongly acid silt loam about 13 inches thick. The subsoil extends to a depth of about 60 inches. It is grayish brown, mottled, very strongly acid silt loam in the upper part; grayish brown, mottled, very strongly acid silty clay loam in the middle part; and light brownish gray, mottled, very strongly acid silt loam in the lower part.

The Guyton soils have low fertility. High levels of exchangeable aluminum in the root zone are potentially toxic to most crops. Water and air move through these soils at a slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. A seasonal high water table fluctuates between the surface and a depth of 1 1/2 feet during December through May. Very brief to long periods of flooding, to depths of 1 to 5 feet, occur mainly during the winter and spring. Flooding can occur, however, during any season. It occurs between June 1 and November 30 more often than 2 years out of 5. Plants are damaged by lack of water during dry periods in summer and fall of most years.

Typically, the Cascilla soils have a surface layer of dark brown, very strongly acid silt loam about 7 inches thick. The subsoil, to a depth of about 60 inches, is dark yellowish brown, very strongly acid silt loam in the upper part; dark brown, very strongly acid silt loam in the middle part; and dark yellowish brown, mottled, very strongly acid silt loam in the lower part.

moved to adjacent protected areas or to pastures at higher elevations. Generally, it is not practical to apply high rates of fertilizer or lime because of the hazard of frequent overflow.

The soils in this complex have fair potential as habitat for woodland wildlife and have good potential as habitat for wetland wildlife. Management that enhances the growth of oak and other mast-producing trees can improve the habitat for squirrels and white-tailed deer. Shallow ponds can be constructed to provide open water areas for waterfowl and furbearers.

The soils in this complex are not suited to cultivated crops or to urban or recreational development. The hazard of flooding is too severe for these uses.

These soils in this complex are in capability subclass Vw. The Guyton soils are in woodland group 2w9, and the Cascilla soils are in 1w7.

Ha—Haggerty loamy fine sand. This level, somewhat poorly drained soil is in areas along the edge of the flood plain of the Ouachita River that are former beaches of relict lakes. An earthen levee protects this soil from most overflows from the Ouachita River. Areas are either long and narrow or oval, and they range in size from 20 to 750 acres. Slopes are dominantly less than 1 percent.

Typically, the surface layer is pale brown, mottled, very strongly acid loamy fine sand about 9 inches thick. The subsoil, to a depth of about 30 inches, is light brownish gray and yellowish brown, mottled, very strongly acid and extremely acid fine sandy loam. The subsoil, between depths of 30 and 40 inches, is light brownish gray, mottled, extremely acid loamy fine sand. The underlying material, to a depth of about 60 inches, is light gray, mottled, very strongly acid sand.

Included with this soil in mapping are a few small areas of Groom, Litro, Mollicy, and Perry soils. These areas make up about 10 percent of the unit. Groom and Mollicy soils are in slightly higher positions and contain more clay in the subsoil. The Litro and Perry soils are in lower positions and contain more clay throughout.

This Haggerty soil has low fertility. It has high levels of exchangeable aluminum in the root zone that are potentially toxic to most crops. Water and air move through this soil at a moderately rapid rate. Water runs off the surface at a very slow rate. A seasonal high water table fluctuates between the surface and a depth of about 1 1/2 feet during November through June. Flooding is rare, but it can occur during unusually high flood levels or when levees fail. Plants generally suffer from a lack of water during dry periods in summer and fall of most years. This soil dries quickly after rains.

Most of the acreage is used for cultivated crops. A small acreage is in woodland and native grass pasture (fig. 3).

This soil is poorly suited to cultivated crops. The main limitations are wetness in spring, droughtiness in summer and fall, high levels of exchangeable aluminum in the root zone, and low fertility. The main crops are wheat, soybeans, and rice. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Drainage is needed to allow timely seedbed preparation in the spring. Crop residue left on or near the surface helps to conserve moisture and maintain tilth. Crops respond to fertilization and liming programs designed to improve the fertility and overcome the potentially toxic effects of the exchangeable aluminum in the root zone. In areas where water of suitable quality is available, supplemental irrigation can prevent the damage to crops that results during dry periods of most years.

This soil is moderately well suited to pasture. Suitable pasture plants are common bermudagrass, ryegrass, Pensacola bahiagrass, white clover, vetch, and winter peas. Wetness in spring and droughtiness in summer and fall are the main limitations. Use of proper stocking rates and pasture rotation helps to keep the pasture in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is moderately well suited to woodland. The surface layer furnishes poor traction when dry, and seedling mortality rates are generally high because of droughtiness. During the winter, wetness limits the use of equipment. Trees suitable for planting are eastern cottonwood and American sycamore.

This soil is poorly suited to urban and recreational development. The main limitations are wetness and flooding. Drainage is needed if roads and building foundations are constructed. Major flood-control structures are needed to protect this soil from flooding.

This soil has fair potential as habitat for openland and woodland wildlife. Habitat for wildlife such as white-tailed deer and squirrels can be improved by using management that enhances the growth of oak and other mast-producing trees. Habitat for openland wildlife can be improved by providing permanently vegetated areas.

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

He—Haggerty silty clay. This level, somewhat poorly drained soil is in areas that are former beaches of relict lakes. These areas are mainly along the extreme eastern edge of the flood plain of the Ouachita River. Earthen levees protect this soil from most overflows of the Ouachita River. Areas range from about 50 to 500 acres in size. Slopes are dominantly less than 1 percent.

Typically, the surface layer extends to a depth of about 7 inches. It is very dark grayish brown, mottled, very strongly acid silty clay in the upper part and dark grayish brown, mottled, very strongly acid silty clay in the lower part. The subsoil, to a depth of about 60 inches, is light brownish gray and brown, mottled, extremely acid fine sandy loam in the upper part and light brownish gray, mottled, extremely acid loamy fine sand in the lower part.

Figure 3.—Switchgrass and panicum are the main native grasses in this area of Haggerty loamy fine sand.

Included with this soil in mapping are a few small

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All areas of this soil are used for the production of hardwood trees. The soil is poorly suited to cultivated crops and pasture and generally unsuited to urban uses because of the hazard of frequent flooding.

This soil is moderately well suited to woodland. Flooding and wetness limit the use of equipment. Trees should be water tolerant, and they should be planted and harvested during dry periods. Suitable trees to plant are eastern cottonwood and American sycamore. Soil droughtiness during the summer lowers the seedling survival rates in areas where understory plants are numerous.

This soil is poorly suited to pasture. Flooding, wetness in winter and spring, droughtiness in summer and fall, and low fertility are the main limitations. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, dallisgrass, white clover, vetch, and winter peas. During flood periods, cattle should be moved to adjacent protected areas or to pastures at higher elevations. It is generally not practical to apply high amounts of fertilizer and lime because of the frequent flooding.

This soil has fair potential as habitat for woodland wildlife. This habitat can be improved by providing small open areas and using management that enhances the growth of oak and other mast-producing trees.

This soil is not suited to most urban uses and is poorly suited to recreational development. The main hazards and limitations are flooding and wetness.

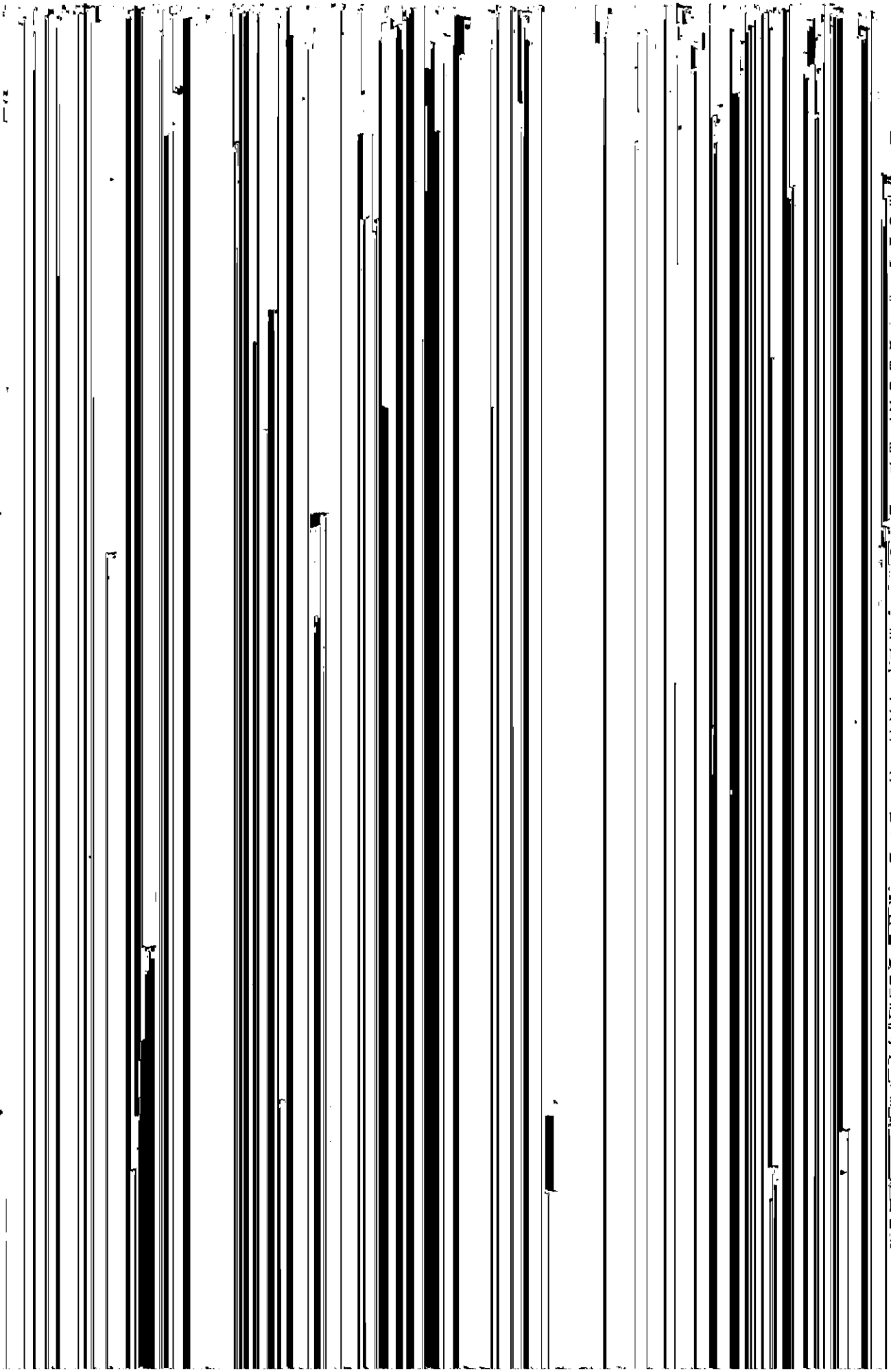
This soil is in capability subclass Vw and woodland group 2w6.

Hh—Haggerty silty clay, frequently flooded. This level, somewhat poorly drained soil is in areas that are former beaches of relict lakes. These areas are mainly along the eastern edge of the flood plain of the Ouachita River. Areas range from about 30 to 500 acres. Slopes are dominantly less than 1 percent.

Typically, the surface layer is dark gray and gray, mottled, extremely acid silty clay about 12 inches thick. The subsoil, to a depth of about 33 inches, is light gray, mottled, extremely acid fine sandy loam in the upper part and yellowish brown, mottled, extremely acid loamy fine sand in the lower part. The underlying material, to a depth of about 60 inches, is light gray, mottled, extremely acid loamy fine sand.

Included with this soil in mapping are a few small areas of Groom, Litro, and Perry soils. These areas make up about 10 percent of the unit. The Groom soils are at higher positions, and the Litro and Perry soils are in positions similar to those of the Haggerty soil. All of these soils contain more clay in the subsoil than does the Haggerty soil.

This Haggerty soil has low fertility. It contains high levels of exchangeable aluminum that are potentially toxic to most crops. Water and air move through the surface layer at a slow rate and through the subsoil at a



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hardwoods. Few
etness limits the
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nt the eventual
tand of trees.

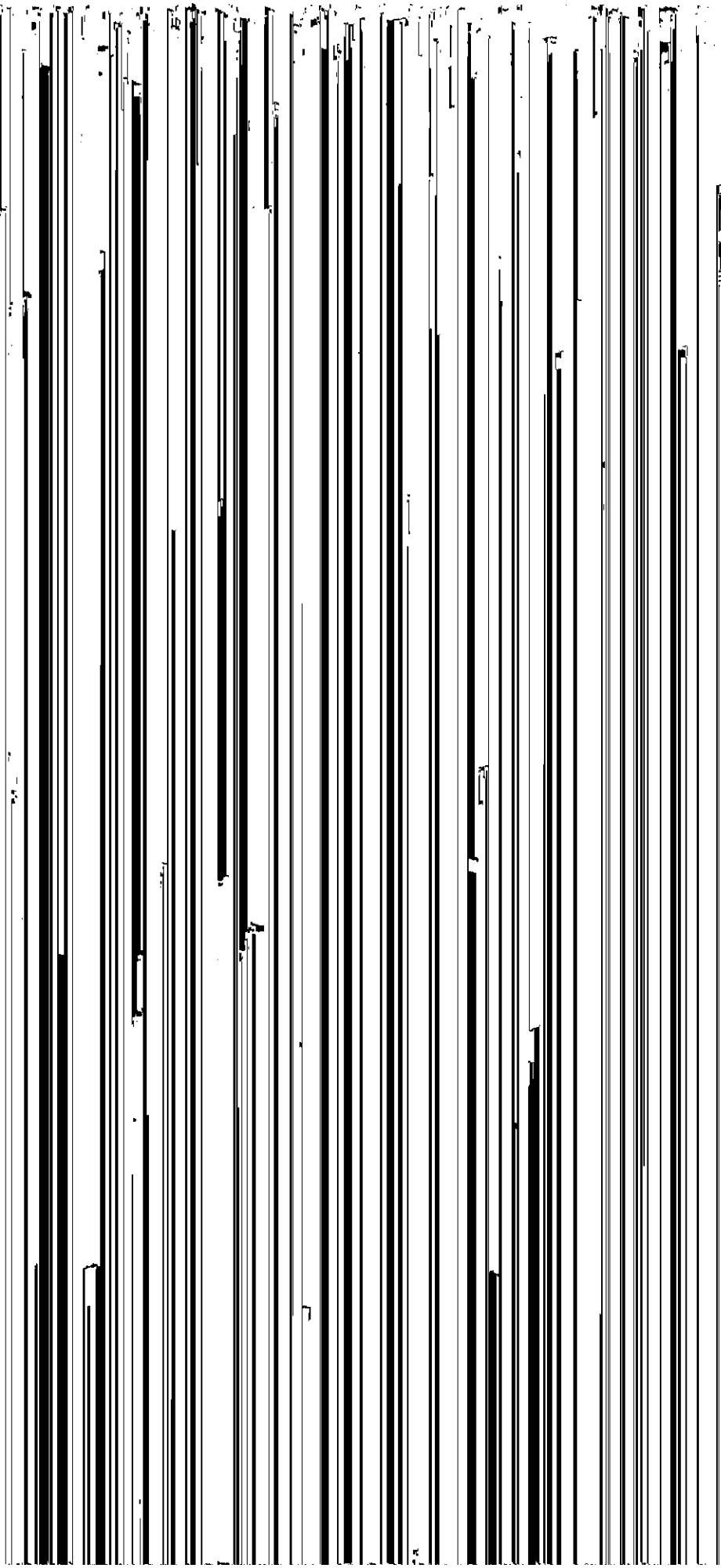


table fluctuates between depths of about 1 1/2 feet during December through April. This soil has erate shrink-swell potential. Plants are damaged k of water during dry periods in summer and fall of years. The surface layer of this soil is slightly sticky wet and hard when dry.

st areas are used for crops. A small acreage is or pasture and woodland.

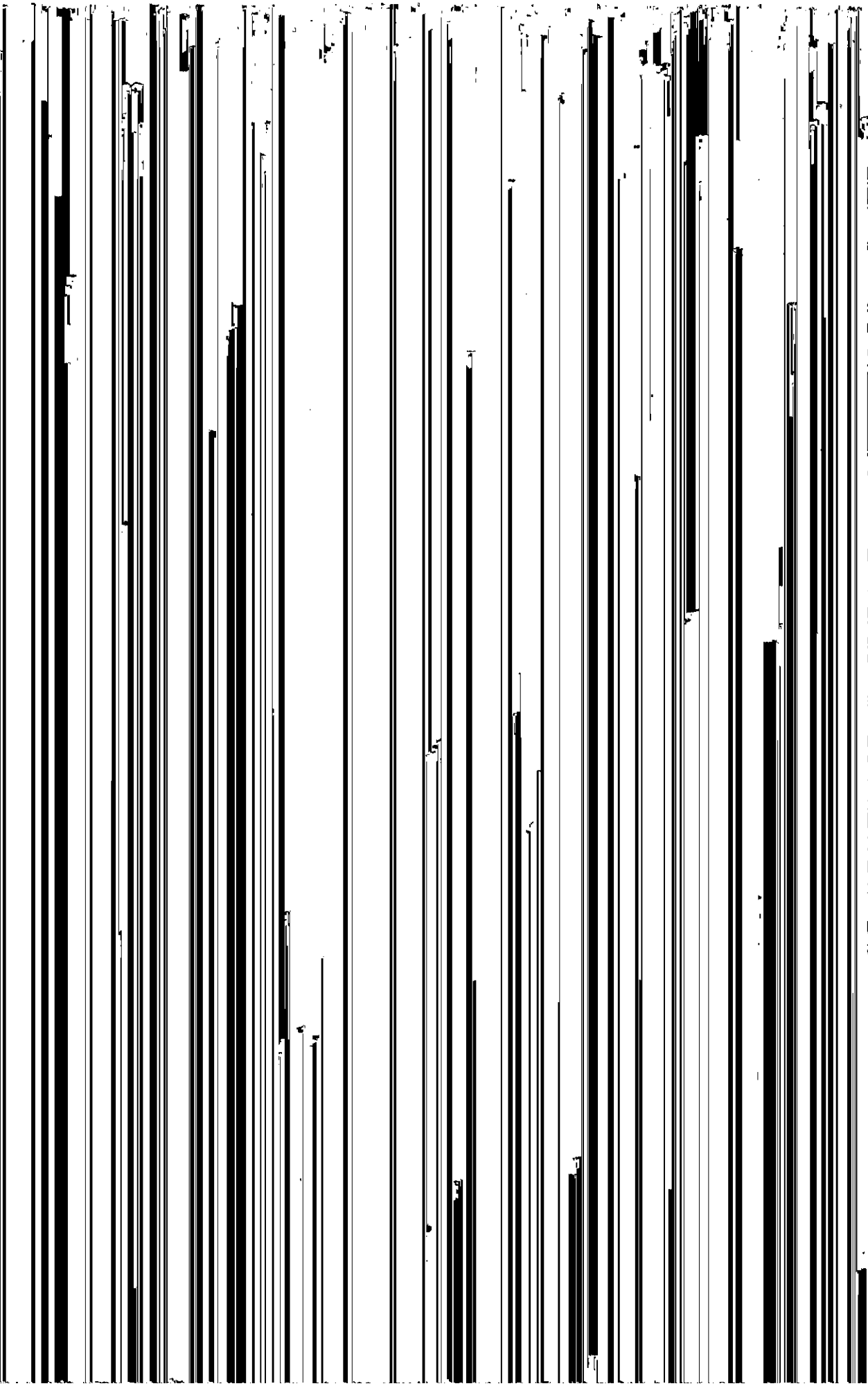
s soil is well suited to cultivated crops. It is limited by wetness, medium fertility, and moderately high of exchangeable aluminum in the root zone.

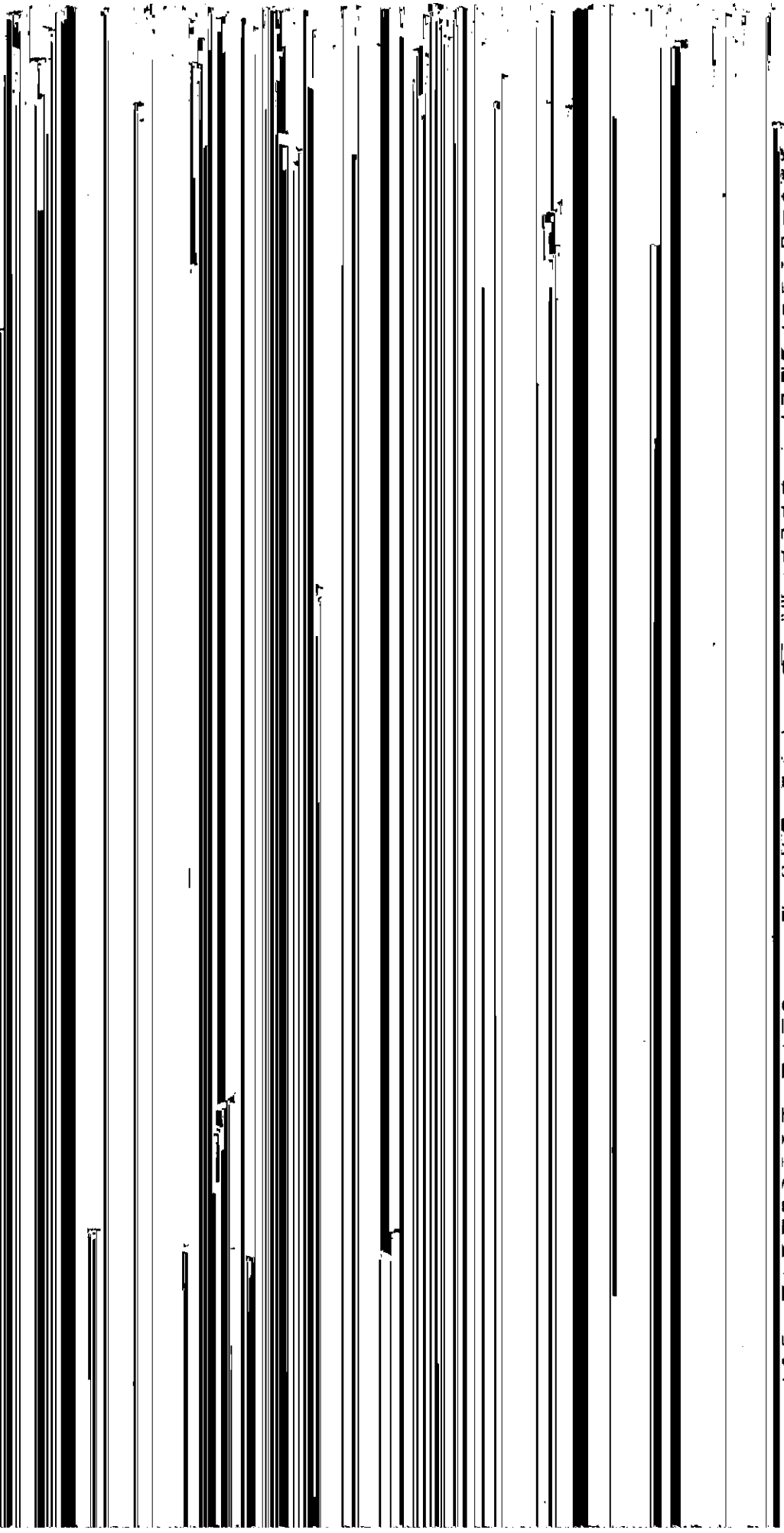
eans and rice are the main crops. Other suitable are cotton, corn, and small grains. This soil nes cloddy if it is worked when it is too wet or too roper row arrangement, field drains, and grassed s are needed to remove excess surface water. grading and smoothing can also help to remove s water. Flood irrigation is needed if this soil is for rice. Excessive cultivation can result in the tion of a tillage pan. This pan can be broken by plowing or chiseling when the soil is dry. Returning esidue to the soil or regularly adding other organic r improves fertility, reduces crusting, and increases ater intake rate. Most crops respond to fertilization ming programs designed to improve the fertility and ome the potentially toxic effects of the ngeable aluminum in the root zone.

s soil is well suited to pasture. Suitable pasture s are common bermudagrass, Coastal udagrass, improved bermudagrass, Pensacola grass, ryegrass, white clover, red clover, vetch, and r peas. Management that maintains optimum vigor quality of forage plants is needed. Periodic mowing clipping helps to maintain uniform growth, urages selective grazing, and reduces clumpy h. Most pasture plants respond well to fertilizer and

s soil is well suited to woodland. It has high ntial for the produciton of southern hardwoods. Few s, however, remain in woodland. Plant competition 's natural regeneration but does not prevent the tual development of a fully stocked, normal stand of . Among the trees that are suitable for planting are rn cottonwood and American sycamore. Wetness he sticky consistence of the surface layer limits the of equipment somewhat.

is soil has good potential as habitat for openland woodland wildlife and fair potential for wetland fe. There are few or no soil limitations affecting agement and development. The habitat for openland fe, such as doves, quail, and rabbits, can be oved by providing vegetated plots for food and r. Managing woodland to encourage the growth of and providing open areas to encourage understory th can improve the habitat for wildlife such as white- deer and squirrels.





han do the Forestdale soils, and they
y periods.
acreage is in crops. A small acreage is
e and homesites.
his unit are well suited to cultivated crops.
d mainly by wetness. The main suitable
n (fig. 4), soybeans, rice, corn, grain
t, and oats. Wetness is a limitation to
rticularly in the Forestdale soil. Land
ioothing can improve surface drainage,
rge volumes of soil would have to be
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nixtures help to maintain fertility and tilth.
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this unit are well suited to pasture.
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re plants are common bermudagrass,
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white clover, winter peas, vetch, and red
er and lime are needed for optimum
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n, and restricted grazing during wet
to keep the pasture and soil in good

this complex are well suited to woodland,
ney are also suited to cropland most areas
ared for crops or pasture. Conventional
rvesting timber generally can be used, but
be limited during rainy periods, generally
to April. Plant competition delays natural
ut does not prevent the eventual
of a fully stocked stand of trees. Among
are suitable for planting on both Idee and
ils are eastern cottonwood and sweetgum.
this complex are poorly suited to urban
The main limitations are wetness, low
affects local roads and streets, and high
otential. Drainage is needed if roads and
lations are constructed. Roads should be
ffset the limited ability of the soil to support
ffects of shrinking and swelling can be
using proper engineering designs and by
h material that has a low shrink-swell
tic tank absorption fields do not function
g rainy periods because of wetness in both
slow permeability in the Forestdale soils.
ght to be located on areas of the Idee soils
le.
this unit have good to fair potential as
enland, wetland, and woodland wildlife.
listurbed, vegetated areas near cropland
habitat for wildlife such as rabbits, dove,
nagement of woodland that enhances the
and other mast-producing trees can
abitat for squirrels, white-tailed deer, and

brown, mottled, very strongly acid silt loam and silty clay loam in the upper part; yellowish brown and brown, mottled, very strongly acid loam and fine sandy loam in the middle part; and dark yellowish brown, mottled, very strongly acid fine sandy loam in the lower part.

The Goodwill soils have medium fertility. Water and air move through these soils at a moderate rate. Water runs off the surface at a slow rate. The seasonal high water table is more than 6 feet below the surface. The shrink-swell potential is moderate. Plants are damaged by lack of water during dry periods in summer and fall of most years.

Included with this unit in mapping are a few small areas of Dexter, Forestdale, and Perry soils. The Dexter soils are on the highest ridges and have a redder subsoil than either the Idee or Goodwill soils. The Forestdale and Perry soils are in swales and other low positions and contain more clay in the subsoil than do the Idee and Goodwill soils.

Most areas are in cultivated crops. A small acreage is used for pasture and homesites.

The soils in this unit are well suited to cultivated crops. They are limited mainly by wetness and short, irregular slopes. Soybeans, grain sorghum, cotton, rice, and wheat are the main crops. Land grading and smoothing can improve surface drainage, but in places large volumes of soil would have to be moved. Returning all crop residue to these soils and using a cropping system that includes grasses, legumes, or grass-legume mixtures help to maintain fertility and tilth. Lime is generally needed. Most crops respond well to fertilizer.

The soils in this complex are well suited to pasture. They have few limitations. Suitable pasture plants are improved bermudagrass, common bermudagrass, Pensacola bahiagrass, ryegrass, ball clover, arrowleaf clover, and crimson clover. Fertilizer and lime are needed for optimum growth of grasses and legumes. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition.

The soils in this complex are well suited to woodland. Few areas, however, remain in woodland. These soils have a high production potential for hardwoods. Suitable trees to plant on both Idee and Goodwill soils are eastern cottonwood and sweetgum. Wetness limits the use of equipment somewhat. Careful management is needed to control competition from undesirable plants.

The soils in this unit have good potential as habitat for openland and woodland wildlife. Small, undisturbed, and vegetated areas should be provided near cropland. Management of woodland that enhances the growth of oak and other mast-producing trees improves the habitat for squirrels, white-tailed deer, and wild turkeys.

The soils in this complex are moderately well suited to urban development. The main limitations are wetness, moderately slow permeability, and moderate shrink-swell potential. Excess water can be removed by using shallow ditches and providing the proper grade for drainage. Buildings and roads can be designed to offset the effects of shrinking and swelling. Where septic tanks are installed, the limitation of moderately slow permeability can be overcome by increasing the size of the absorption field. The Goodwill soils have fewer limitations for homesites than the Idee soils and should be selected for this use where possible.

The soils in this complex are moderately well suited to recreational development. The main limitations are wetness in the Idee soils and slope in the Goodwill soils.

The soils in this complex are in capabiity subclass IIw. The Idee soils are in woodland group 2w5, and the Goodwill soils are in 2o4.

La—Lafe silt loam. This level, somewhat poorly drained soil is on low stream terraces. Areas are mainly near the footslopes of terrace upland. Slopes are dominantly less than 1 percent.

Typically, the surface layer is grayish brown, medium acid silt loam about 4 inches thick. The subsurface layer is light brownish gray, neutral silt loam about 8 inches thick. The subsoil is brown, mottled, strongly alkaline silt loam in the upper part; yellowish brown, mottled, strongly alkaline silt loam in the middle part; and yellowish brown, mottled, strongly alkaline silty clay loam in the lower part. The underlying material, to a depth of about 70 inches, is a light brownish gray, mottled, strongly alkaline silt loam. In places the subsoil is gray throughout.

Included with this soil in mapping are a few small areas of Frizzell, Guyton, Libuse, and Wrightsville soils. These areas make up about 20 percent of the unit. None of the included soils are so alkaline in the subsoil as the Lafe soil. Frizzell, Guyton, and Wrightsville soils are in positions similar to those of the Lafe soil. The Libuse soils are in higher positions on the terrace uplands.

This Lafe soil has low fertility. Water and air move through this soil at a very slow rate. Plants generally suffer from a lack of water during dry periods in summer and fall of most years. Water runs off the surface at a slow rate. A seasonal high water table fluctuates between the surface and a depth of about 1 foot during December through April. The subsoil generally remains dry even during periods of high rainfall. Concentrations of sodium salts in the subsoil limit root development and the supply of moisture available for plant growth.

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

This soil is moderately well suited to pasture. The concentration of sodium in the subsoil and low available water capacity limit the growth of pasture plants. Drought- and salt-tolerant species are most suitable for planting. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, white clover, winter peas, and vetch. Proper grazing practices, weed control, and fertilizer are needed for maximum quality of forage.

The Lafe soil is poorly suited to cultivated crops. It is limited mainly by excessive amounts of sodium in the subsoil, wetness in the spring, and droughtiness in the summer. Most crops commonly grown in the parish cannot be expected to grow well on this soil.

This soil is poorly suited to the production of southern hardwoods. The production potential is low. The main concerns in producing and harvesting timber are the toxic effect of the high concentrations of sodium in the soil, wetness in the winter and spring, and droughtiness in the summer.

This soil has fair potential as habitat for wetland wildlife and poor potential for woodland wildlife. Shallow ponds can be constructed to attract waterfowl and furbearers. Preserving oak and other mast-producing trees in wooded areas helps to attract such wildlife as squirrels and white-tailed deer. In areas where erosion has exposed the subsoil, white-tailed deer can obtain salt by licking on the subsoil materials.

This soil is poorly suited to urban development. The main limitations are wetness and low strength. Drainage is needed if roads and building foundations are constructed. Roads should be designed to offset the limited ability of the soil to support a load.

This soil is poorly suited to recreational development. The main limitations are wetness, excessive sodium in the subsoil, and very slow permeability.

This soil is in capability subclass VIs. It is not assigned to a woodland group.

Lb—Libuse silt loam, 1 to 3 percent slopes. This very gently sloping, moderately well drained soil is on side slopes and convex ridgetops on terrace uplands. Areas range from about 10 to 500 acres.

Typically, the surface layer is dark grayish brown, medium acid silt loam about 4 inches thick. The subsoil, to a depth of about 27 inches, is yellowish brown and strong brown, strongly acid silt loam. Below this, to a depth of about 60 inches, is a fragipan of yellowish brown, mottled, strongly acid silt loam. The next layer, to a depth of about 70 inches, is yellowish brown, mottled, very strongly acid silt loam.

Included with this soil in mapping are a few small areas of Frizzell, Guyton, and Debute soils. These areas make up about 10 percent of the unit. The Frizzell soils are on level areas and do not have a fragipan. The Guyton soils are on the flood plains of narrow creeks and in depressions and do not have a fragipan. The Debute soils are in similar positions and have a redder subsoil. Also included in some mapped areas are small areas of Libuse soils that have slopes of 3 to 5 percent.

This Libuse soil has low fertility. It has high levels of exchangeable aluminum in the root zone that are potentially toxic to most crops. Water and air move through the upper part of this soil at a moderate rate and through the lower part at a slow rate. Water runs off the surface at a medium rate. A seasonal high water table is perched above the fragipan for short periods after heavy rains. Plants are damaged by lack of water during dry periods in summer and fall of most years. This soil has a low shrink-swell potential.

Most areas are in woodland. A small acreage is used for crops, pasture, and homesites.

This soil is moderately well suited to cultivated crops. The main limitations are slope, low fertility, high levels of exchangeable aluminum in the root zone, and droughtiness during the summer months. Soybeans and potatoes are the main crops, but cotton and corn are grown in places. Most crops respond to fertilization and liming programs designed to improve the fertility and overcome the potentially toxic aluminum in the root zone. Crop residues left on or near the surface help to conserve moisture, maintain tilth, and control erosion.

This soil is well suited to pasture. Low fertility is the main limitation for this use. Suitable pasture plants are Coastal bermudagrass, common bermudagrass, improved bermudagrass, Pensacola bahiagrass, ball clover, crimson clover, and arrowleaf clover. Fertilizer and lime are needed for optimum production of forage.

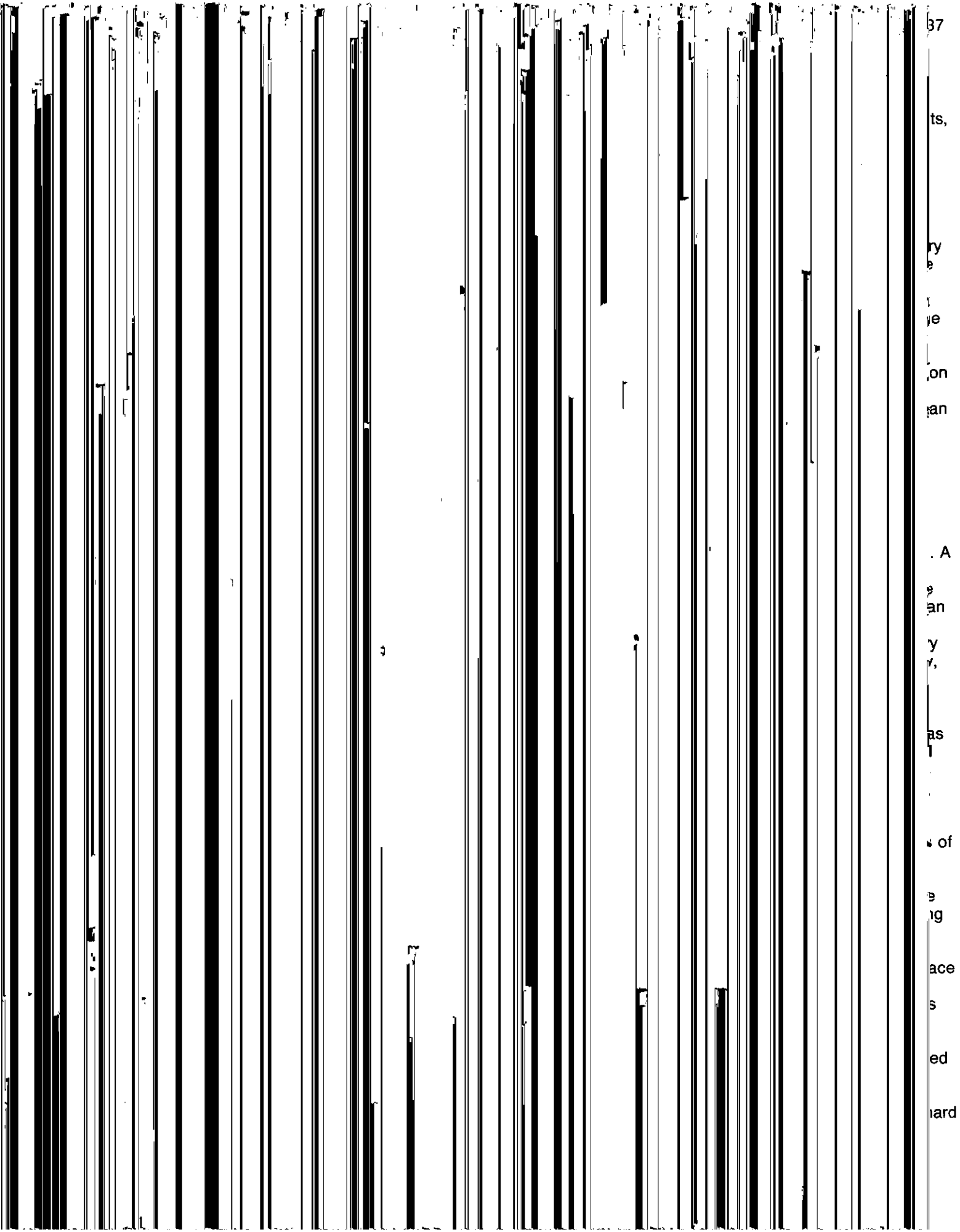
This soil is well suited to the production of loblolly pine and sweetgum. It has few limitations for use and management. Plant competition delays natural regeneration but does not prevent the eventual development of a fully stocked, normal stand of trees. Proper site preparation can control initial plant competition, and spraying can control subsequent growth.

This soil is moderately well suited to urban and recreational development. Wetness, slow permeabiity, moderate shrink-swell potential, and low strength are the main limitations. A seasonal high water table is perched above the fragipan, and drainage should be provided if buildings are constructed. Preserving the existing plant cover during construction helps to control erosion. Establishing and maintaining plant cover can be achieved by properly fertilizing, seeding, mulching, and shaping the slopes. Septic tank absorption fields do not function properly during rainy periods because of the wetness and slow permeability. The limitation of slow permeability can be overcome by increasing the size of the absorption field.

This soil has good potential as habitat for openland and woodland wildlife. Maintaining undisturbed and permanently vegetated areas near cropland can improve the habitat for quail, rabbits, and wild turkeys. Woodland can be managed to preserve oak and other mast-producing trees for use by white-tailed deer and squirrels.

This soil is in capability subclass IIe and woodland group 3o7.

Le—Libuse silt loam, 3 to 5 percent slopes. This gently sloping, moderately well drained soil is on side



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e layer is dark gray, very strongly
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rty, Mollicy, and Perry soils.
about 10 percent of the unit. All of
Perry soils, are on slightly higher
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tions and have reddish underlying

v fertility. It has high levels of
n in the root zone that are
t crops. Water runs off the
and stands in low places for long
ns. This soil is frequently flooded
riods. It floods between June 1
e frequently than 2 years out of 5.
re 2 to 10 feet deep, but exceed
asonal high water table fluctuates
nd a depth of about 1 foot. This
well potential.
ost entirely for the production of

ly well suited to the production of
kory, baldcypress, and common
imitations are flooding and
be water tolerant (fig. 5), and they
arvested during dry periods.
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nd low fertility. Common
ain suitable pasture plant. It is not
ates of fertilizer and lime because
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otential as habitat for wetland
l for woodland wildlife. The
d furbearers can be improved by
nds. Management that enhances
other mast-producing trees can
squirrels and white-tailed deer.
ted to recreational development
d to urban development. The main
and wetness.
ty subclass Vw and woodland

loam. This level, moderately well
n broad flats on the flood plains
Areas range from about 10 to 500
nantly less than 1 percent.

poorly drained Hebert soils are in similar positions and have a lighter colored surface layer. The poorly drained Perry soils are in slightly lower positions and contain more clay throughout.

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nplex are well suited to woodland.
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to 1 percent slopes. This poorly
backswamp areas on flood plains
, Bayou Bonne Idee, and other
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0 acres. Slopes are dominantly

ce layer is gray, mottled, medium
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and medium acid clay in the upper
brown, mottled, mildly alkaline clay
underlying material, to a depth of
ddish brown, mottled, mildly

oil in mapping are a few small
Gallion, Hebert, Mer Rouge, and
areas make up 15 percent of the
ert, and Mer Rouge soils are on
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medium fertility. Water and air
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during December through April.
igh shrink-swell potential. Plants

are damaged by lack of water during dry periods in summer and fall of some years.

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

This soil is moderately well suited to cultivated crops, mainly rice (fig. 6), soybeans, and grain sorghum. If this soil is used for nonirrigated crops, the main limitations are wetness and poor tilth. This soil can be worked only within a narrow range of moisture content. It is sticky when wet and hard when dry, and it becomes cloddy if it

bermudagrass, dallisgrass, Pensacola bahiagrass, white clover, vetch, and winter peas. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition. Periodic mowing and clipping helps to maintain uniform growth, discourages selective grazing, and reduces clumpy growth. Most pasture plants respond well to fertilizer.

This soil is moderately well suited to woodland. It has high potential for the production of southern

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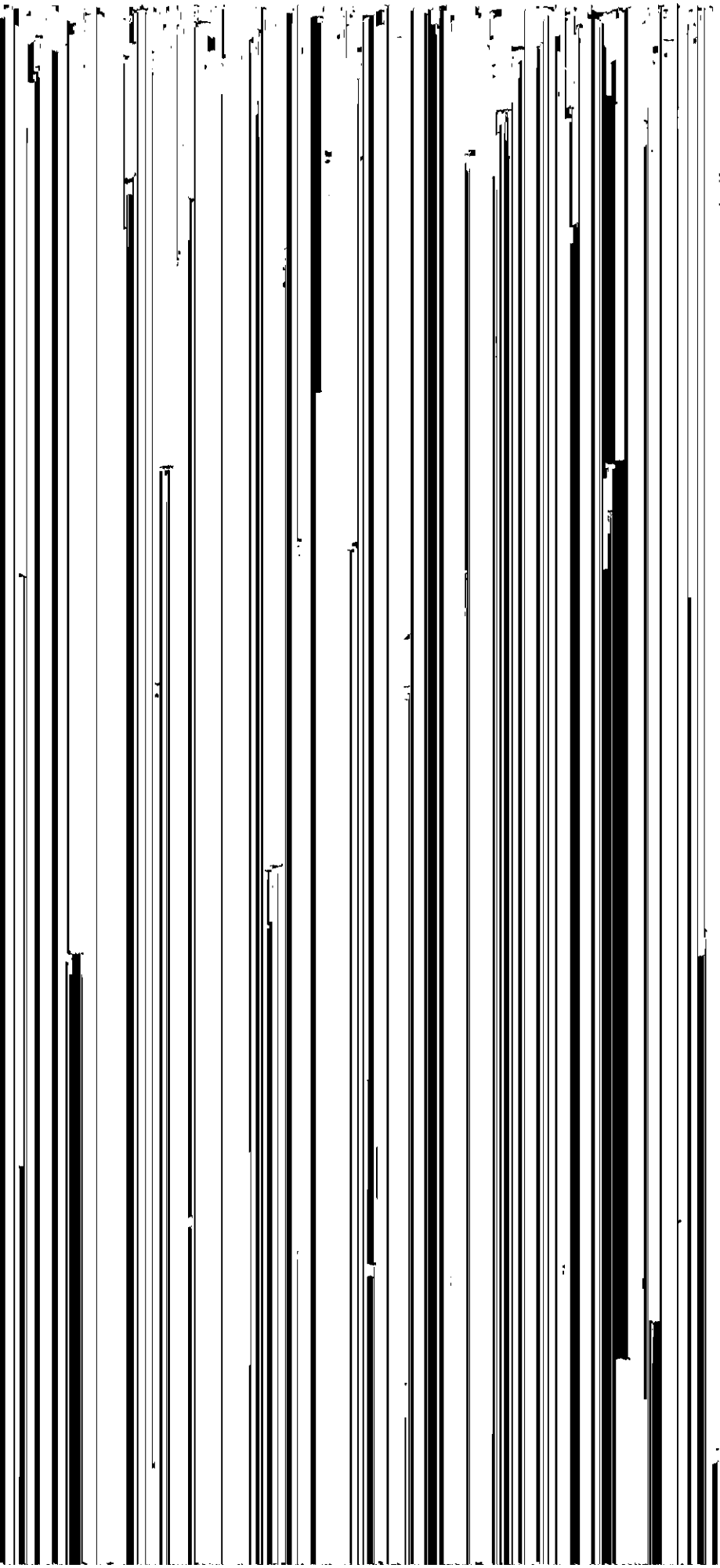

ry periods. Trees commonly are subject to
ıw when the soil is excessively wet and winds
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oil is poorly suited to cultivated crops. The main
ıs are wetness, poor tilth, very slow permeability,
ding. Soybeans and grain sorghum are the main
otton, corn, and rice are grown in places. This
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oil is moderately well suited to pasture. The main
ıs are wetness, the very slow permeability, and
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f grazing. The main suitable pasture plants are
ı bermudagrass, winter peas, vetch, and adapted
rasses. Use of proper stocking rates, pasture
and restricted grazing during wet periods helps
the pasture and soil in good condition. During
riods, cattle should be moved to adjacent
d areas or to pastures at higher elevations.
oil is poorly suited to urban development. The
ıitations are flooding, wetness, and very high
well potential. Major flood-control structures,
ith extensive local drainage systems, are needed
ct this soil from flooding.
oil has fair potential as habitat for openland,
ıd, and wetland wildlife. Habitat can be created
ved by planting appropriate vegetation, by
ıing existing plant cover, or by helping the natural
ınment of desirable plants.
oil is in capability subclass IVw and woodland
w6.

Portland silt loam. This nearly level, somewhat
rained soil is on slight rises on flood plains of the
a River, Bayou Bonne Idee, and other former
s of the Arkansas River. Areas range from about
0 acres. Slopes range from 0 to 2 percent.
ally, the surface layer is dark brown, very strongly
loam about 4 inches thick. The subsoil is brown,
very strongly acid clay in the upper part and
brown, mottled, medium acid clay in the lower
e underlying material, to a depth of about 46
is reddish brown, mottled, yellowish red, mildly
clay. The next layer, to a depth of about 60
is reddish brown, mottled, mildly alkaline silty
m.
ed with this soil in mapping are a few small
Hebert, Perry, Rilla, and Sterlington soils. Also
are a few small areas of Portland clay soils.
ncluded areas make up about 15 percent of the
e Hebert, Rilla, and Sterlington soils are on
ositions and are loamy throughout. The Perry
on lower positions and have a grayer subsoil.

This Portland soil has medium fertility. Water and air move through this soil at a very slow rate. Water runs off the surface at a slow to very slow rate. A seasonal high water table fluctuates between the surface and a depth of 1 foot during December through May. Flooding is rare, but it can occur during periods of unusually heavy rainfall. This soil has a high shrink-swell potential in the subsoil. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most areas are used for cultivated crops. A small acreage is in pasture and woodland.

This soil is moderately well suited to cultivated crops. The main limitations are wetness and very slow permeability. Rice, soybeans, and grain sorghum are the main crops grown. Proper row arrangement, field drains, and grassed outlets are needed to remove excess surface water. Flood irrigation is needed if rice is grown. Land grading and smoothing will improve surface drainage, allow more uniform application of irrigation water, and permit more efficient use of farm equipment. Pipe or other drop structures should be installed in drainage channels to control the water level in ricefields and to prevent excessive erosion of drainage channels. Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces crusting, and increases the water intake rate.

This soil is well suited to pasture. The main limitations are wetness and the very slow permeability. Grazing when the soil is wet results in compaction of the surface layer. The main suitable pasture plants are improved bermudagrass, common bermudagrass, dallisgrass, Pensacola bahiagrass, white clover, tall fescue, vetch, and winter peas. Fertilizer and lime are needed for optimum growth of grasses and legumes. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition.

This soil is well suited to woodland. It has high potential for producing southern hardwoods. Only trees that can tolerate seasonal wetness should be planted. Among the trees that are suitable for planting are green ash, eastern cottonwood, and sweetgum. Conventional methods of harvesting timber generally can be used, but their use may be limited during rainy periods, generally from December to May.

This soil has good potential as habitat for openland, woodland, and wetland wildlife. There are few, if any, soil limitations affecting habitat management or development. Habitat for openland and woodland wildlife can be improved by planting appropriate vegetation or by helping the natural establishment of desirable plants. Habitat for waterfowl can be created by constructing shallow ponds.

This soil is poorly suited to urban development. It has severe limitations for building sites, local roads and streets, and most sanitary facilities. The main limitations are wetness, flooding, low strength as it affects local roads and streets, and high shrink-swell potential. Drainage is needed if roads and building foundations are constructed. Local roads and streets can be designed to offset the limited ability of the soil to support a load. If buildings are constructed on this soil, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage caused by shrinking and swelling. Septic tank absorption fields do not function properly during rainy periods because of wetness and very slow permeability. Constructing adequate protection levees and installing an extensive drainage system can help prevent flooding and reduce wetness.

This soil is poorly suited to recreational development. The main limitations are wetness, flooding, and very slow permeability.

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

Po—Portland clay. This nearly level, somewhat poorly drained soil is on slight rises on flood plains of the Ouachita River, Bayou Bonne Idee, and other former channels of the Arkansas River. Areas range from about 10 to 200 acres. Slopes range from 0 to 2 percent.

Typically, the surface layer is brown, mottled, medium acid clay about 6 inches thick. The subsoil, to a depth of about 65 inches, is reddish brown, mottled, strongly acid clay in the upper part and reddish brown, mottled clay in the middle and lower parts.

Included with this soil in mapping are a few small areas of Gallion, Hebert, Perry, Rilla, and Sterlington soils. These areas make up about 10 percent of the unit. The Gallion, Hebert, Rilla, and Sterlington soils are on higher positions and are loamy throughout. The Perry soils have a grayer subsoil and are on slightly lower positions.

This Portland soil has medium fertility. Water and air move through this soil at a very slow rate. Water runs off the surface at a slow to very slow rate and stands in low places for long periods after heavy rains. A seasonal high water table fluctuates between the surface and a depth of 1 foot during December through May. Flooding is rare, but it can occur during periods of unusually high rainfall. This soil has a high shrink-swell potential. The surface layer of this soil remains wet for long periods after heavy rains. It is sticky when wet and hard when dry. Plants are damaged by lack of water during dry periods in summer and fall of some years.

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

This soil is moderately well suited to cultivated crops, mainly rice, soybeans, and grain sorghum. The main limitations are wetness and the clayey textures. This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content. It becomes cloddy if it is worked when it is too wet or too dry. Proper row arrangement, field drains, and grassed outlets are

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

Pr—Portland clay, occasionally flooded. This level, somewhat poorly drained soil is in broad flats on the flood plains of the Ouachita River, Bayou Bonne Idee, and other former channels of the Arkansas River. Areas range from about 50 to 1,000 acres. Slopes are dominantly less than 1 percent.

Typically, the surface layer is brown, mottled, medium acid clay about 11 inches thick. The subsoil is reddish brown, mottled clay. It is strongly acid in the upper part, neutral in the middle part, and moderately alkaline in the lower part. The underlying material, to a depth of about 60 inches, is reddish brown, mottled, mildly alkaline clay. In places the surface layer is silty clay loam.

Included with this soil in mapping are a few small areas of Hebert, Perry, and Rilla soils. Also included are a few small areas of Portland silt loam soils. These included areas make up about 20 percent of the map unit. The Hebert and Rilla soils are on higher positions and are loamy throughout. The Perry soils are on lower positions and have a grayer subsoil.

This Portland soil has medium fertility. Water and air move through this soil at a very slow rate. Water runs off the surface at a very slow rate and stands in low places for very long periods after heavy rains. A seasonal high water table fluctuates between the surface and a depth of about 1 foot during December through May. In winter and spring, this soil is subject to brief to very long periods of flooding. Flooding between June 1 and November 30 occurs less often than 2 years out of 5. Floodwaters are 5 feet or more in depth. The surface layer of this soil is sticky when wet and hard when dry. This soil has a high shrink-swell potential.

Most areas are in woodland. A small acreage is used for pasture and cultivated crops.

This soil is moderately well suited to pasture. If this soil is used for pasture, the main limitations are occasional flooding and wetness. Suitable pasture plants are common bermudagrass and adapted native grasses. During flood periods, cattle should be moved to adjacent protected areas or to pastures at higher elevations. It is not practical to apply high rates of lime and fertilizer because of the flooding hazard. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition.

This soil is poorly suited to cultivated crops. The main limitations are flooding, wetness, and poor tilth. The main suitable crops are soybeans and grain sorghum. This soil is sticky when wet and hard when dry, and it becomes cloddy if tilled when it is too wet or too dry. Drainage is needed for most cultivated crops.

This soil is moderately well suited to the production of southern hardwoods. The main concerns in producing and harvesting timber are occasional flooding and

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Most areas are in cultivated crops. A small acreage is used for homesites, pasture, pecan orchards, and woodland.

This soil is well suited to cultivated crops, mainly cotton, soybeans, corn, rice, grain sorghum, and potatoes. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improves fertility and helps to maintain soil tilth and content of organic matter. Most crops respond to fertilization and liming programs designed to overcome fertility deficiencies and moderately high levels of exchangeable aluminum in the root zone.

This soil is well suited to pasture. It has few limitations. The main suitable pasture plants are Coastal bermudagrass, improved bermudagrass, common bermudagrass, Pensacola bahiagrass, tall fescue, white clover, winter peas, and vetch. Fertilizer and lime are needed for optimum growth of grasses and legumes. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition.

This soil is well suited to woodland. It has a high production potential for southern hardwoods and few limitations for use and management. Suitable trees to plant are eastern cottonwood and American sycamore.

This soil is moderately well suited to urban development. It has moderate limitations for building sites, local roads and streets, and most sanitary facilities. The main limitations are moderate shrink-swell potential, low strength as it affects local roads and streets, and moderate permeability. Buildings and roads can be designed to offset the effects of shrinking and swelling and the limited ability of the soil to support a load. Wetness and moderate permeability are limitations where septic tank absorption fields are installed. The limitation of moderate permeability can be overcome by increasing the size of the absorption field.

This soil has good potential as habitat for woodland and openland wildlife habitat. It has few limitations affecting wildlife habitat management and development. Habitat for wildlife such as rabbits, quail, and doves can easily be created or improved by planting appropriate vegetation. Habitat for white-tailed deer and squirrels can be improved by encouraging the growth of oak and other mast-producing trees.

This soil is well suited to recreational development. It has few limitations for this use.

This soil is in capability class I and woodland group 2o4.

Rb—Rilla silt loam, 1 to 3 percent slopes. This very gently sloping, well drained soil is on natural levees bordering Bayou Bonne Idee and other former channels and distributaries of the Arkansas River. Areas range from about 10 to 75 acres.

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root zone that are potentially toxic to some crops. Water and air move through these soils at a moderately slow rate. Water runs off the surface at a slow rate. A seasonal high water table fluctuates between depths of 1 1/2 and 3 feet during December through April. These soils have a moderate shrink-swell potential in the subsoil. Plants are damaged by lack of water during dry periods in summer and fall of most years.

Included with this unit in mapping are a few small areas of Perry, Portland, and Rilla soils. Also included are a few small areas of Sterlington soils that have slopes in excess of 3 percent. These included areas make up about 15 percent of the unit. The poorly drained Perry soils and somewhat poorly drained Portland soils are on the lowest positions and are clayey throughout. The well drained Rilla soils are on positions similar to those of the Rilla soils and have a more clayey subsoil.

Most areas of this unit are used for cultivated crops. A few areas are used for pecan orchards, pasture, and homesites.

The soils in this unit are well suited to cultivated crops. The main limitations are wetness in the swales, slope on the ridges, and moderately high levels of exchangeable aluminum in the root zone. These soils are friable and easy to keep in good tilth. They can be worked over a wide range of moisture content. Surface crusting is a minor problem. Irregular slopes hinder tillage operations. The main suitable crops are cotton, soybeans, grain sorghum, corn, and truck crops. Proper row arrangement, field drainageways, and grassed outlets are needed to remove excess surface water from the swales. Land grading and smoothing can improve surface drainage, but in places large volumes of soil would have to be moved. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, and control erosion. Most crops respond to fertility and liming programs designed to improve fertility and overcome the potentially toxic effects of the exchangeable aluminum in the root zone.

The soils in this unit are well suited to pasture. They have few limitations. Grazing when the soils are wet results in compaction of the surface layer. The main suitable pasture plants are Coastal bermudagrass, improved bermudagrass, common bermudagrass (fig. 7), Pensacola bahiagrass, tall fescue, white clover, winter peas, and vetch. Fertilizer and lime are needed for optimum growth of grasses and legumes. Use of proper stocking rates, pasture rotation, and restricted grazing during wet periods helps to keep the pasture and soil in good condition.

The soils in this complex are well suited to woodland. They have high production potential for southern hardwoods, but few areas remain in woods. The main trees suitable to plant are eastern cottonwood and American sycamore.

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This soil is moderately well suited to woodland. It has moderate potential for the production of bottomland hardwoods. The main suitable trees to plant are baldcypress, green ash, and water tupelo. Special equipment and methods are needed for planting and harvesting trees because of wetness.

This soil is generally not suited to cultivated crops, pasture, recreational development, and urban development. Wetness from ponding severely limits these uses.

This Yorktown soil is in capability subclass VIIw and woodland group 4w9.

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individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." More detailed information can be obtained from the local office of the Soil Conservation Service, the Cooperative Extension Service, and the Louisiana Agricultural Experiment Station.

About 257,000 acres in Morehouse Parish was used for crops and pasture in 1978, according to the Census of Agriculture. Of this total, about 241,000 acres was used for crops—mainly cotton, soybeans, and rice—and about 16,000 acres was used for pasture. From 1974 to 1978 the amount of cropland gradually increased and the amount of pasture decreased. There has been a gradual increase in the amount of urban land.

Differences in crop suitability and management needs result from differences in soil characteristics, such as fertility levels, erodibility, organic matter content, availability of water for plant growth, drainage, and flooding hazards. Cropping systems and soil tillage are also an important part of management. Each farm has a unique soil pattern; therefore, each has unique management problems. Not all principles of farm management, however, apply to all soils and crops. This section describes the general principles of management that can be applied widely to the soils of Morehouse Parish.

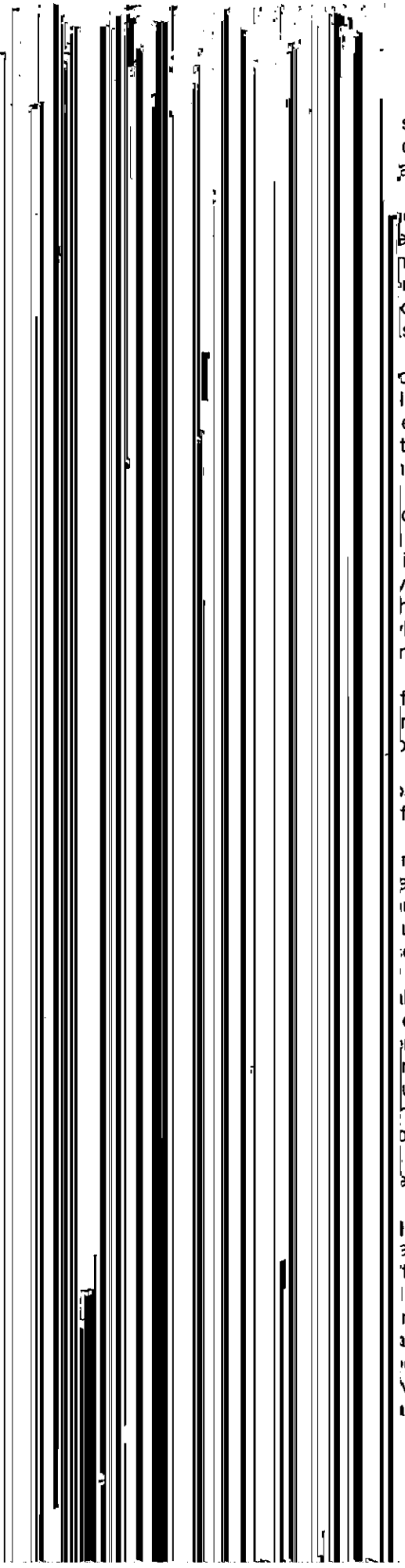
Fertilization and liming. The amount of fertilizer or lime needed depends upon the following: (1) the crop to be grown, (2) the past cropping history, (3) the level of yield desired, and (4) the nature of the soil. Applications of fertilizer and lime should be based on laboratory analysis of soil samples from each field.

In the upper 20 inches, the soils in Morehouse Parish range in reaction from extremely acid to moderately alkaline. The more acid soils may require lime.

Most of the soils in the parish contain quantities of exchangeable aluminum that are potentially toxic to some plants. Although soil treatments for this condition have not been thoroughly studied, applying lime is probably the most widespread method of reducing exchangeable aluminum levels.

Additional information on the levels of soil fertility, fertilization, and liming is provided in the section "Soil Fertility."

Organic matter content. Organic matter is important as a source of nitrogen for plant growth. It is also



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soil. Producers of livestock, for example, generally use cropping systems that have a higher percentage of pasture than the cropping systems on cash-crop farms.

Control of erosion. Soil erosion is a concern on soils that are bare of vegetative cover on the uplands of Morehouse Parish. It is also a problem on the gently sloping soils on the bottomlands. Sheet erosion is moderately severe in all fallow fields and in newly constructed drainage ditches. Some gullies erode, mainly on the more sloping soils and at overfalls into drainage ditches. Sheet and gully erosion can be reduced by maintaining a cover of vegetation or plant residues on the soil surface during as much of the year as possible, by farming on the contour or stripcropping where possible, by using minimum tillage, and by controlling weeds by methods other than fallow plowing. New drainage ditches should be seeded immediately after construction. Water-control structures placed at overfalls into drainage ditches help control gully erosion.

Pasture. Perennial grasses or legumes, or mixtures of both, are grown for pasture and hay. The mixtures generally consist of either a summer or a winter perennial grass and a suitable legume. In addition, many farmers seed small grain or ryegrass in the fall for winter and spring forage. Excess grass in summer is harvested as hay for use in winter.

Common bermudagrass, improved bermudagrass, Coastal bermudagrass, and Pensacola bahiagrass are the summer perennials most commonly grown. Improved bermudagrass, Coastal bermudagrass, and Pensacola bahiagrass produce good forage. Tall fescue, the chief winter perennial grass now grown in the parish grows well only on soils that have a favorable moisture content. All of these grasses respond well to fertilizer, particularly nitrogen. White clover, crimson clover, ball clover, arrowleaf clover, vetch, and southern wild winter peas are the most commonly grown legumes. All of these legumes respond well to lime, particularly on acid soils.

Proper grazing is essential for high-quality forage, stand survival, and erosion control. Brush and weed control, fertilization, liming, and renovation of the pasture are also important.

Some farmers obtain additional forage by grazing the understory native plants in woodland. Forage yields vary with the woodland sites, native forage condition, and density of the timber stand. Although most woodland is managed mainly for timber production, substantial volumes of forage can be obtained from woodland under good management. Stocking rates and grazing periods need to be carefully managed to obtain optimum forage production and to maintain an adequate cover of understory plants to control erosion.

Yields

The average yields per acre that can be expected of the principal crops under a high level of management

rals indicate progressively greater limitations and
wer choices for practical use. The classes are
ed as follows:
ss I soils have few limitations that restrict their use.
ss II soils have moderate limitations that reduce the
e of plants or that require moderate conservation
ces.
ss III soils have severe limitations that reduce the
e of plants or that require special conservation
ices, or both.
ss IV soils have very severe limitations that reduce
hoice of plants or that require very careful
gement, or both.
ss V soils are not likely to erode but have other
tions, impractical to remove, that limit their use.
ss VI soils have severe limitations that make them
rally unsuitable for cultivation.
ss VII soils have very severe limitations that make
unsuitable for cultivation.
ss VIII soils and miscellaneous areas have
tions that nearly preclude their use for commercial
production.
pability subclasses are soil groups within one class.
are designated by adding a small letter, *e, w, s,* or
the class numeral, for example, IIe. The letter *e*
s that the main limitation is risk of erosion unless
-growing plant cover is maintained; *w* shows that
r in or on the soil interferes with plant growth or
ation (in some soils the wetness can be partly
cted by artificial drainage); *s* shows that the soil is
d mainly because it is shallow, droughty, or stony;
, used in only some parts of the United States,
s that the chief limitation is climate that is very cold
ry dry.
class I there are no subclasses because the soils of
lass have few limitations. Class V contains only the
lasses indicated by *w, s,* or *c* because the soils in
V are subject to little or no erosion. They have
limitations that restrict their use to pasture,
eland, woodland, wildlife habitat, or recreation.
e total acreage of soils in each capability class and
lass is shown in table 8. The capability classification
ch map unit is given in the section "Detailed Soil
Units."

odland Management and Productivity

e total forest area in Morehouse Parish is 200,600
s, of which 97 percent is privately owned and 3
ent is publicly owned. Commercial forests cover 39
ent of the parish (*42*).
rest types in the parish are: 3 percent longleaf-slash
, 26.5 percent loblolly-shortleaf pine< 11.7 percent
pine, 5.8 percent oak-hickory, 50 percent oak-gum-
ess, and 3 percent elm-ash-cottonwood.

Most of the oak-gum-cypress forest type is on the alluvial plains of Bonne Idee, Bartholomew, and Lafourche Bayous, and the Ouachita River.

Tree planting on the terrace uplands has been an important woodland conservation practice. Many trees were planted in the late 1950's.

Prescribed burning is a desirable woodland conservation practice. This practice is not recommended in some parts of the parish because producing gas wells make prescribed burning a safety hazard. Pipelines and other structures interfere with the location of fire lanes.

Adequate markets for timber products are in Morehouse Parish and adjacent areas. Managed woodlands are also of value for wildlife habitat, recreation, soil and water conservation, and natural beauty.

Table 9 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability group) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

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

The third element in the symbol, a numeral, indicates the kind of trees for which the soils in the group are best suited and also indicates the severity of the hazard or limitation. The numerals 1, 2, and 3 indicate slight, moderate, and severe limitations, respectively, and suitability for needleleaved trees. The numerals 4, 5, and 6 indicate slight, moderate, and severe limitations, respectively, and suitability for broadleaved trees. The numerals 7, 8, and 9 indicate slight, moderate, and severe limitations, respectively, and suitability for both needleleaved and broadleaved trees.

In table 9, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

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

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

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

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

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

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

Recreation

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

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

In table 11, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

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

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

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

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

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

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, and soil moisture. Examples of shrubs are privet, huckleberry, yaupon, and mockorange.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, and slope. Examples of wetland plants are smartweed, wild millet, wildrice, sedges, and reeds.

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

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

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

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

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

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

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

Building Site Development

Table 12 shows the degree and kind of soil limitations that affect shallow excavations, dwellings without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by a cemented pan or a very firm dense layer; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

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

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil

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noderate shrink-swell potential or slopes of 15 to 25 percent. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 14, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

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

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

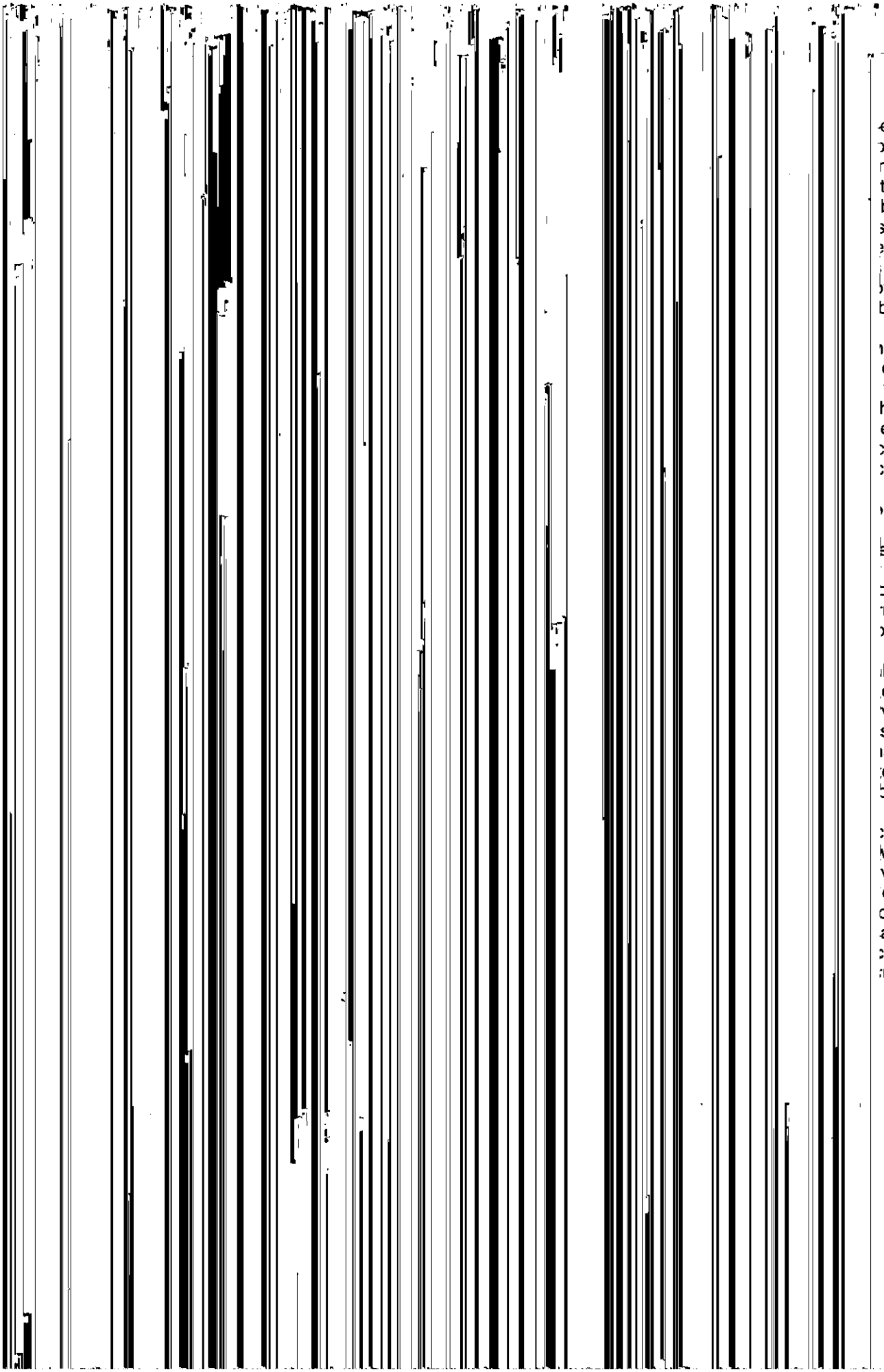
Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

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

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

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

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



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Soil Properties

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

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, water content, and bulk density. These results are reported in table 20.

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

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

Engineering Index Properties

Table 16 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

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

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

Classification of the soils is determined according to the Unified soil classification system (*4*) and the system adopted by the American Association of State Highway and Transportation Officials (*3*).

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

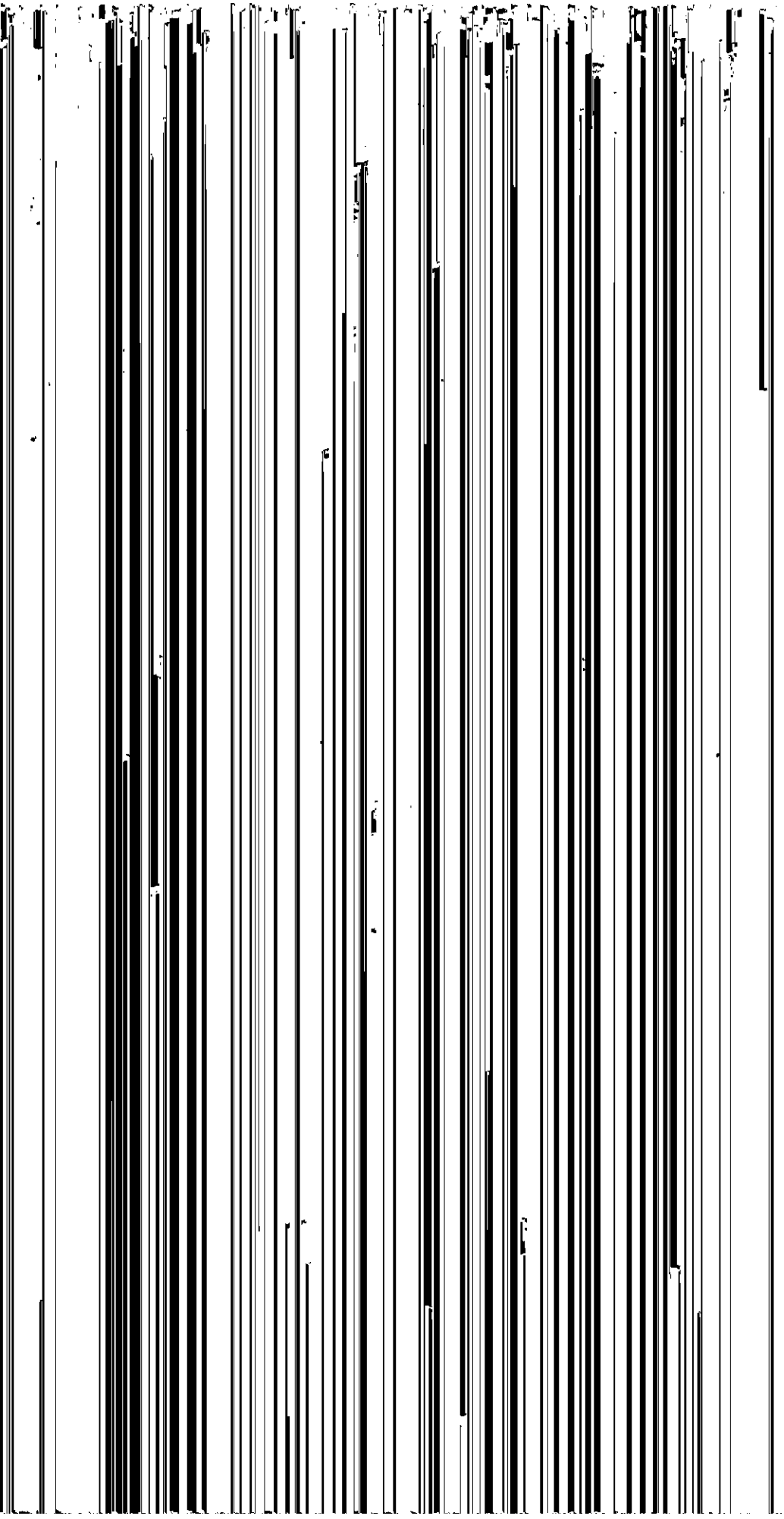
The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid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

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

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

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

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The



th of the root zone. The most
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K indicates the susceptibility of a soil to
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p to 4 percent) and on soil structure
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e estimated content of organic matter is
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ss than 2 millimeters in diameter.

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

Soil and Water Features

Table 18 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

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

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary inundation of an area, is caused by overflowing streams or by runoff from adjacent slopes. Water standing for short periods after rainfall is not considered flooding, nor is water in swamps and marshes.

Table 18 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs, on the average, no more than twice in 5 years; and *frequent* that it occurs, on the average, more than twice in 5 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-June, for example, means that flooding can occur during the period November through June.

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

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

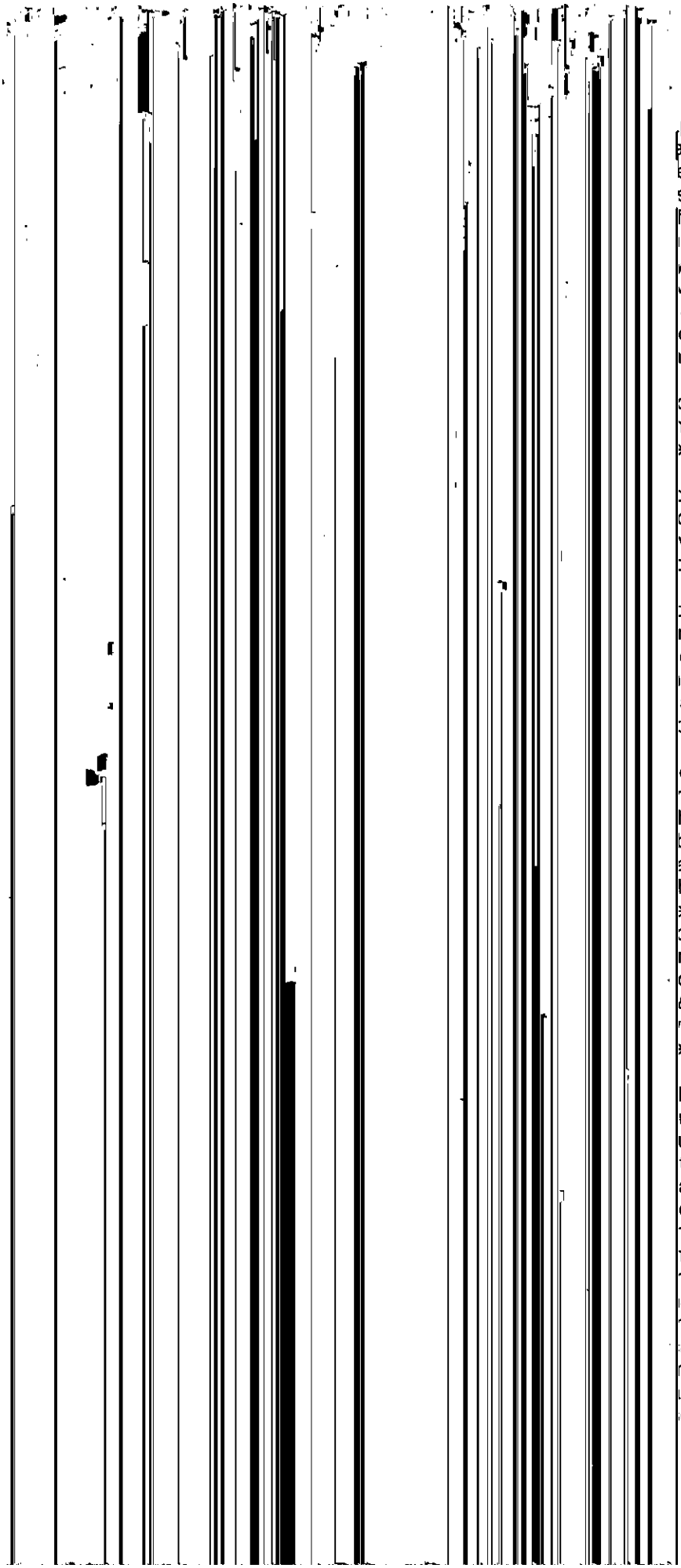
High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 18 are the depth to the seasonal high water table; the kind of water table—that is, perched or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 18.

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

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

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

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class,



pacity; base saturation; and the saturation of Al and a. The results from these analyses, given in table 19, e the basis for the discussion of this section. These sults can be especially useful in evaluating possible fects of practices that often result in material from bsurface horizons being incorporated into the surface yer. Such practices include ditching, terracing, land veling, and levee construction.

Soil fertility management and other soil management ograms in the area are, with few exceptions, based on iemical and physical alteration of the surface horizon plow layer. Characteristics of this horizon may be tremely variable from one place to another, depending n past management practices and soil use. In this ction, however, emphasis is placed on characteristics the horizons below the plow layer. Subsurface orizons are less subject to change, or change very owly, as a result of alteration of the plow layer. Fertility vels and other chemical characteristics of the surface orizon can be essentially eliminated as limiting factors plant growth under management systems that include dequate soil testing and fertility maintenance programs. nder these conditions, physical characteristics of the ow layer and physical and chemical characteristics of ie lower horizons are the soil factors that may limit ant growth and consequently limit crop yields under ormal management practices.

The actual quantity of a nutrient element present as ell as the relative quantity of other elements present re important considerations in evaluating a soil's fertility. he soil's *cation exchange capacity* is a measure of its bility to adsorb positively charged ions, or *extractable ations,* of such elements as Ca, Mg, K, Na, A1, and H. hus, larger quantities of an element such as Ca are equired to give a higher saturation of extractable Ca in a oil horizon with a high cation-exchange capacity than in ne in which the capacity to adsorb cations is low. ouisiana Agricultural Experiment Station publications (*7, 8*) contain additional information about these factors as ell as the guidelines (*28*) used for the various nutrient evels.

The level of a soil's cation-exchange capacity is lmost entirely the result of the amount and kind of clay resent and the *organic matter content.* Some soils, uch as Perry and Portland soils, contain large amounts f clay throughout and have a high cation-exchange apacity. In contrast, soils such as Haggerty soils ontain relatively small amounts of clay and have a uch lower cation-exchange capacity. Many of the soils n the parish have subsoil horizons that are more clayey han the surface horizon. As a result, they frequently ave a greater cation-exchange capacity in the subsoil han in the surface horizon. The cation-exchange apacity in the Gallion soils, for example, is 11.2 illiequivalents per 100 grams of soil in the surface layer nd as high as 29.4 milliequivalents per 100 grams of oil in the subsoil. Organic matter also tends to produce

iated soils that do not have the high Na
estdale, Guyton, Groom, Tillou, and
s in the parish typically have relatively
xtractable Na, but at a greater depth than
Problems resulting from the relatively high
table Na in these soils are less severe
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n deep-rooting perennial or summer-
plants. Other soils that, at some location
even greater depths, may have relatively
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lla soils, and possibly others. High levels
soils, however, are typically at too great a
cantly influence the growth of plants in

shallow depths, the reduced yields may
or more of the detrimental effects
large quantities of Na (*6*). The Na
gregation; as a result, the permeability of
nd water is decreased. Consequently,
more slowly than associated soils. This is
arent early in spring after they have
ted during the wet winter months. Once
dry, the recharge of moisture from rainfall
ving season is slower than in associated
owing on these soils may suffer drought

ls may also inhibit or interfere with the
of other nutrients such as Ca and Mg. On
, some plants take up quantities of Na
o have a detrimental effect. Where high
ssociated with high alkalinity, there is a
o some plants as well as possible toxic
ions such as the bicarbonate associated
ntities of Na. The high alkalinity may also
ed availability to the plant of many nutrient
e soil contains large enough quantities of
ome plants may suffer physiologic drought
notic movement of water from the plant to

tant characteristics of the soils that have
extractable Na are indicated by the data in
the high levels of Na are mainly in subsoil
Lafe soils typically have high Na levels
of about 10 to 20 inches. Second, soils
latively large quantities of Na in the upper
s of the solum also have relatively large
a in the lower part. This indicates a hazard
ting subsoil material into the surface layer,
land smoothing or spreading spoil (soil
from excavations for structures such as
ations, roadways, drainage ditches, and
Finally, a neutral or alkaline soil reaction
greater) is not a reliable indicator of a
f extractable Na. Some soils, such as the
ave high levels of extractable Na in
re quite acid.

between extractable Al and
that actual measurement of
the only reliable indicator of
s having soil pH 5.5 or less
els of extractable Al have
ıg higher pH values.
ıltural methods that reduce
d with high levels of
ı thoroughly studied in
ns to pH values above 5.5 is
ıd method of reducing
5, 16, 27, 29, 30). There is a
o Al phytotoxicity among
nding, in some cases, on
Planting crops or cultivars
evels can help avoid

er essential plant nutrient
t in amounts that are toxic to
lrained soils. Mn is
ı that potentially toxic levels
rizons that have a pH 5.0 to
H of the soil to pH 6.0 or
o nontoxic levels. Unlike Al,
oxidized or reduced form in
ced form of Mn is more
ned or somewhat poorly
.ted soils that are better
ic levels in surface horizons
an Al. Toxicity from high
ın in wet years than dry

hods used by the Soil
uisiana Agricultural
les in parentheses refer to

e, ferric sulfate titration

gestion (6A3).
ium acetate pH 7.0,
N2), magnesium (602),
n (6Q2).
chloride-triethanolamine I

sum of cations (5A3a).
tions, TEA, pH 8.2 (5C3).
lution (8C1a).
ide extraction (6G).
y's weak extracting solution).

al Analyses of

alyses of several typical
re given in table 20 and the
al analyses are in table 21.
the clay fraction of these

table 22. The data are for soils
lly selected sites. The pedons are
s and are described in the section
'heir Morphology." Soil samples were
ational Soil Survey Laboratory, Soil
ice, and by the Soil Characterization
ana Agricultural Experiment Station.
tions, except those for grain-size
density, were made on soil material
limeters in diameter. Measurements
nt or quantity of unit weight were
oven-dry basis. The methods used by
Survey Laboratory and the Soil
aboratory are indicated in the list that
s in parentheses refer to published

nm fraction) weight percentages of
than 2 mm (3A1).
nm fraction) pipette extraction, weight
of all materials less than 2 mm (3A1).
ss than 0.002 mm) pipette extraction,
ntages of materials less than 2 mm

Water retained—pressure extraction, percentage of oven-dry weight of less than 2 mm material; 1/3 or 1/10 (3/10) bar (4B1), 15 bars (4B2).
Moist bulk density—of less than 2 mm material, saran-coated clods (4A1).
Organic carbon—dichromate, ferric sulfate titration (6A1a).
Extractable cations—ammonium acetate pH 7.0, uncorrected; calcium (6N2), magnesium (602), sodium (6P2), potassium (6Q2).
Extractable acidity—barium chloride-triethanolamine I (6H1a).
Cation-exchange capacity—ammonium acetate, pH 7.0 (5A1b).
Base saturation—ammonium acetate, pH 7.0 (5C1).
Reaction (pH)—1:1 water dilution (8C1a).
Reaction (pH)—potassium chloride (8C1c).
Reaction (pH)—calcium chloride (8C1e).
Aluminum—potassium chloride extraction (6G).
Iron—dithionate-citrate extract (6C2b).
Available phosphorus—(Bray No. 1 and No. 2).

ɔn of the Soils

ıtion used by the National
ix categories (*43*).
hese categories are the
subgroup, family, and
on soil properties
d from those observations
ınts. Table 23 shows the
ɜ survey area. The
ollowing paragraphs.
ɜ recognized. The
ɜct the dominant soil-
gree of soil formation.
ord ending in *sol*. An

divided into suborders
ɜrties that influence soil
ɔlant growth or properties
t variables within the
ɜ name of a suborder
ıle is Udalf (*Ud*, meaning

ɔrder is divided into great
similarities in kind,
evelopment of pedogenic
mperature regimes; and
ɔ is identified by the name
that indicates a property of
dalfs (*Hapl*, meaning
alf, the suborder of the
sture regime).
oup has a typic subgroup.
les or extragrades. The
the great group; it is not
e. Intergrades are
borders, or great groups.
ɜrties that are not
ɔup but do not indicate
ı kind of soil. Each
or more adjectives
ɜat group. The adjective
that typifies the great
apludalfs.
ılished within a subgroup on
mical properties and other
ıagement. Mostly the
ns below plow depth where
ty. Among the properties

and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, thermic, Typic Hapludalfs.

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

Soil Series and Their Morphology

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

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the Soil Survey Manual (*40*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*43*). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

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

Allemands Series

The Allemands series consists of poorly drained, very slowly permeable organic soils. These soils formed in moderately thick accumulations of decomposed organic material over semifluid, clayey alluvium deposited by the Mississippi and Arkansas Rivers. They are in rim swamps and former stream channels on the flood plain near Coulee Bayou. The soils are artificially drained, but subject to rare flooding. Slope ranges from 0 to 1 percent.

The soils of the Allemands series are clayey, montmorillonitic, euic, thermic Terric Medisaprists.

Hebert, Perry, and
s are on higher
neral soils. The
al soils on

rained, 3 miles
parish road 6703,
NW1/4, sec. 12,

muck; about 2
ed; weak coarse
g to weak medium
y; few fine roots;
about 10 percent
rupt smooth

'R 3/2) and black
10YR 3/1)
cent fiber, about 1
angular blocky
bout 15 percent
wood fragments;
ary.
sh brown (10YR
(10YR 2/1)
) pressed and
out 1 percent
percent mineral
ragments;
ndary.
1) muck; about 10
bed; weak medium
bout 20 percent
t wood fragments;
undary.
lay; massive;
ngers leaving

anges from 16 to
ers ranges from
in surface layers
IICg horizon
acid.
R or 7.5YR, value
al content ranges
. The fiber content
and from 1 to 10
terial consists
ceous plant
nts, consisting of
s, ranges from 5

GY, value of 4 or

Bussy Series

The Bussy series consists of moderately well drained, slowly permeable soils that have a fragipan. These soils formed in loess on terrace uplands. Slope ranges from 1 to 8 percent.

The soils of the Bussy series are fine-silty, siliceous, thermic Typic Fragiudalfs.

Bussy soils are similar to Libuse soils and commonly are near Debute, Frizzell, Guyton, and Tillou soils. The Debute soils are on side slopes along major drainageways and have a redder subsoil. The somewhat poorly drained Frizzell and Tillou soils are less sloping than Bussy soils and do not have a fragipan. The poorly drained Guyton soils are along the drainageways and do not have a fragipan. The Libuse soils are in similar positions and contain more sand in the fragipan subsoil.

Typical pedon of Bussy silt loam, 1 to 5 percent slopes, 13 miles northeast of Bastrop, 90 feet east of Georgia-Pacific gravel road, 21 feet north of woods road; NW1/4SE1/4, sec. 15, T. 23 N., R. 6 E.

A1—O to 4 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few fine black concretions; strongly acid; clear smooth boundary.

B1—4 to 9 inches; yellowish brown (10YR 5/4) silt loam; common medium faint dark yellowish brown (10YR 4/4) mottles; weak medium subangular blocky structure; friable; common fine and medium roots; few fine black concretions; very strongly acid; gradual smooth boundary.

B21t—9 to 15 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; very friable; common fine and medium roots; thin patchy clay films on faces of peds; few fine black concretions; very strongly acid; clear smooth boundary.

B22t—15 to 22 inches; yellowish brown (10YR 5/6) silt loam; few fine distinct strong brown mottles; weak medium subangular blocky structure; friable; common fine and medium roots; common thick discontinuous clay films on faces of peds; few fine medium black concretions; very strongly acid; clear smooth boundary.

B23t—22 to 35 inches; yellowish brown (10YR 5/4) silt loam; common medium faint light yellowish brown (10YR 6/4) and few fine prominent yellowish red mottles; light yellowish brown (10YR 6/4) silt coats surround most peds; moderate medium subangular blocky structure; friable; common fine and medium roots between peds; common very fine pores; thin patchy clay films on faces of peds; few fine black concretions; very strongly acid; clear wavy boundary.

Bx1—35 to 45 inches; yellowish brown (10YR 5/6) silt loam, common medium faint dark yellowish brown

(10YR 4/4) mottles; moderate coarse prismatic structure parting to weak medium subangular blocky; firm and brittle; common very fine and fine roots between peds; common very fine pores; thin patchy clay films on faces of peds; cracks between prisms are filled with light brownish gray (10YR 6/2) silt loam; common fine and medium black concretions; strongly acid; gradual wavy boundary.

Bx2—45 to 56 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure parting to weak medium subangular blocky; firm and brittle; common very fine pores; thin discontinuous clay films on faces of peds; light brownish gray (10YR 6/2) silt loam 1/2 inch to 2 inches wide between the prisms; common fine and medium black concretions; strongly acid; clear smooth boundary.

Bx3—56 to 65 inches; yellowish brown (10YR 5/6) silt loam; common medium faint light brownish gray (10YR 6/2) mottles; moderate coarse prismastic structure parting to weak medium subangular blocky; firm and slightly brittle; few thin patchy clay films; medium acid.

The thickness of the solum ranges from 60 to 100 inches or more. Depth to the fragipan ranges from 24 to 40 inches. Reaction is mainly very strongly acid or strongly acid throughout, except in surface layers that have been limed. In places the lower part of the fragipan is medium acid. The effective cation-exchange capacity of this soil is 50 percent or more saturated with exchangeable aluminum in the control section to a depth of 30 inches or more.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Texture is silt loam. The B1, where present, has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 through 8.

The B1 horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It is mottled in shades of red, brown, and yellow. Texture is silt loam or silty clay loam.

The Bx horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6. Mottles are in shades of gray, yellow, or brown. Texture is silt loam or silty clay loam.

Cascilla Series

The Cascilla series consists of well drained, moderately permeable soils. These soils formed in loamy alluvium. The soils are on natural levees of major drainageways that drain terrace uplands. Slope ranges from 0 to 2 percent.

The soils of the Cascilla series are fine-silty, mixed, thermic Fluventic Dystrochrepts.

Cascilla soils commonly are near the Frizzell, Guyton, Libuse, Perry, Portland, and Tillou soils. The somewhat poorly drained Guyton soils are in lower positions. The well drained Libuse soils are in higher, more sloping positions and have a fragipan. The Perry and Portland soils are in lower positions and are more clayey throughout.

Typical pedon of Cascilla silt loam, in an area of Guyton-Cascilla complex, frequently flooded, 1 mile north of Beekman school, 63 feet east of center of gravel road at 2nd bridge on south bank of creek; NE1/4SW1/4, sec. 32, T. 23 N., R. 6 E.

Ap—0 to 7 inches; dark brown (10YR 4/3) silt loam; common medium faint brown (10YR 5/3) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; very strongly acid; clear smooth boundary.

B1—7 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; very friable; few fine and medium roots; very strongly acid; clear smooth boundary.

B21—13 to 24 inches; dark yellowish brown (10YR 4/4) silt loam; few fine faint brown mottles; weak medium subangular blocky structure; friable; few fine and medium roots; few thin patchy clay films on a few faces of peds; very strongly acid; clear smooth boundary.

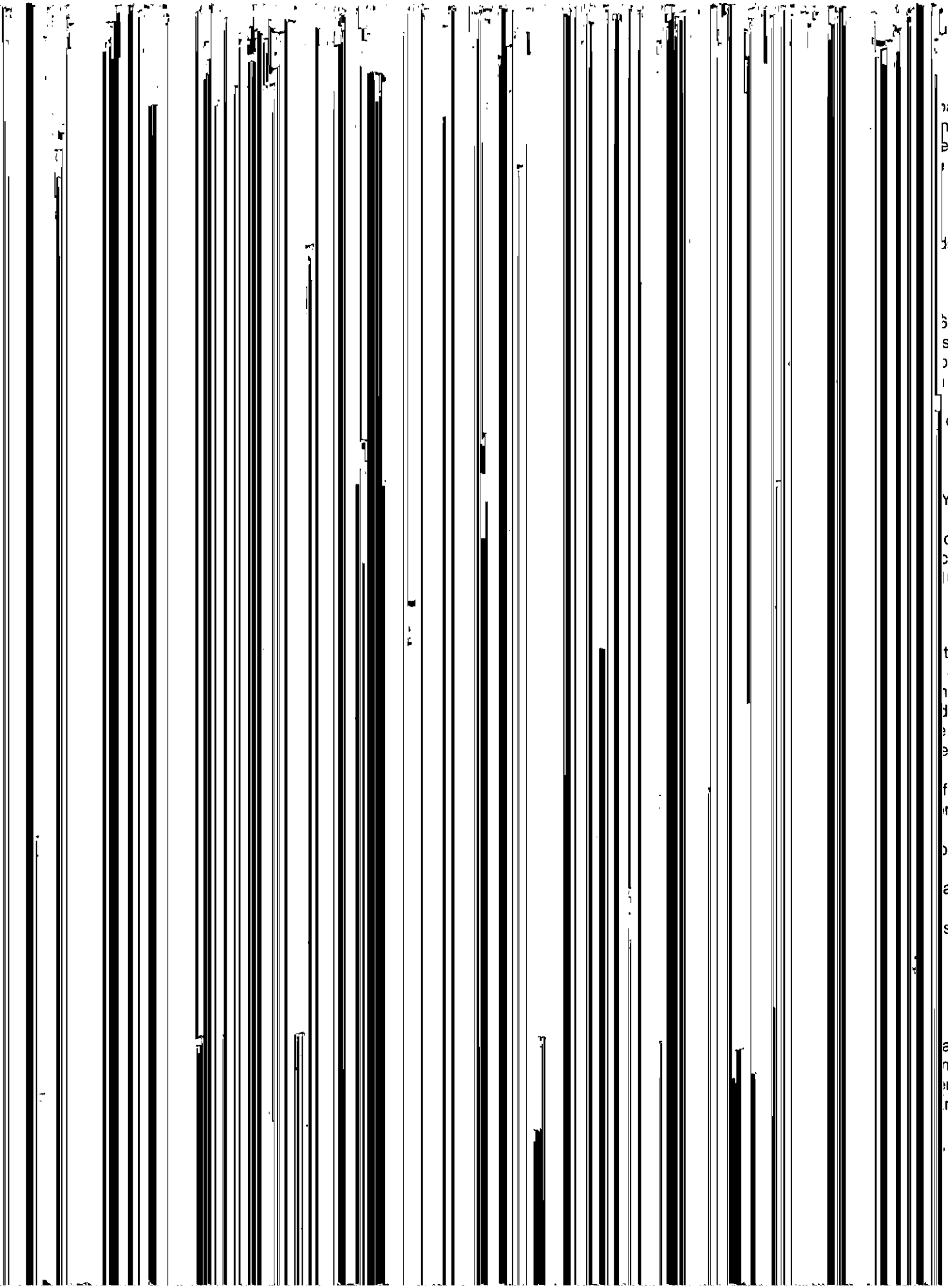
B22—24 to 40 inches; dark brown (10YR 4/3) silt loam; many medium faint brown (10YR 5/3) and few fine faint light brownish gray mottles; moderate medium subangular blocky structure; friable; few medium roots; few thin patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

B3—40 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; common medium faint pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few medium roots; very strongly acid.

The thickness of the solum ranges from 45 to 80 inches. The effective cation-exchange capacity of this soil is 50 percent or more saturated with exchangeable aluminum in the control section to a depth of 30 inches or more. The soil is strongly acid or very strongly acid throughout, except where the surface layer has been limed.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. The thickness ranges from 5 to 8 inches.

The B1, B2, and B3 horizons have hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. Mottles are in shades of brown and gray. The gray mottles are mainly at depths of 24 inches or more below the soil surface.



are near Goodwill and Idee
oils are in lower positions and

silt loam, 3 to 5 percent
st of Mer Rouge, 1,320 feet
165 feet north of turn row;
. 20 N., R. 8 E.

n (10YR 4/3) silt loam; few fine
les; weak medium granular
many fine roots; strongly acid;
ry.
wish brown (10YR 5/4) silt
rong brown mottles; weak
locky structure; friable;
ommon fine pores; few soft
m acid; abrupt smooth

k brown (7.5YR 4/4) silt loam;
inct yellowish red (5YR 4/6)
eds; few fine distinct light
les; moderate medium
ucture; friable; common fine
ores; thin almost continuous
black stains on peds; medium
undary.
ddish brown (5YR 4/4) silty
eds are yellowish red (5YR
nd medium subangular blocky
fine roots; thick almost
; few black stains on some
masses; strongly acid; clear

llowish red (5YR 4/6) clay
subangular blocky structure;
; common thin patchy clay
concereTions; few patchy
; some peds slightly brittle;
mooth boundary.
rk brown (7.5YR 4/4) fine
edium subangular blocky
fine roots; few sand grains
w black stains on peds; medium
oundary.
k brown (7.5YR 4/4) loamy fine
very friable; medium acid.

olum ranges from 34 to 60
s greater than 35 percent at a
the upper boundary of the

of 10YR or 7.5YR, value of 4
4. The thickness ranges from 4
pically ranges from strongly acid
eutral in places where it has

e of 7.5YR or 5YR, value of 4
o 6. It is silt loam, silty clay loam, or clay loam. Reaction ranges from very strongly acid to medium acid.

The IIB3 horizon has colors similar to the Bt horizon. Texture is fine sandy loam, loam, or clay loam. Reaction ranges from very strongly acid to medium acid.

The IIC horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. Reaction ranges from very strongly acid to medium acid.

Forestdale Series

The Forestdale series consists of poorly drained, very slowly permeable soils. These soils formed in clayey and silty alluvium or in alluvium that is mixed with loess. They are on broad, nearly level and depressional areas on the flood plains of the Boeuf River. Slope ranges from 0 to 1 percent.

The soils of the Forestdale series are fine, montmorillonitic, thermic Typic Ochraqualfs.

Forestdale soils are similar to Idee and Hebert soils and commonly are near Dexter, Goodwill, Perry, and Portland soils. The Dexter, Goodwill, Idee, and Hebert soils are more loamy throughout and are in slightly higher positions. Perry and Portland soils contain more clay and are in positions similar to those of the Forestdale soils.

Typical pedon of Forestdale silty clay loam, about 7 miles northeast of Oak Ridge, 1 mile east of Moss Brake, 60 feet east of Turkey Bayou, 90 feet north of parish road 5540; SW1/4SW1/4, sec. 4, T. 19 N., R. 8 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium subangular blocky structure; friable; common fine roots; medium acid; abrupt smooth boundary.

B2tg—6 to 27 inches; light gray (10YR 6/1) silty clay; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky strcture; firm; few fine roots; few thick continuous clay films on faces of peds; few fine brown concretions; strongly acid; clear smooth boundary.

B31g—27 to 35 inches; light gray (10YR 6/1) silty clay loam; many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; few medium and fine roots; thin patchy clay films; common fine brown concretions; medium acid; clear smooth boundary.

B32g—35 to 60 inches; light brownish gray (10YR 6/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few medium roots; thin patchy clay films; many medium black and brown masses and concretions; slightly acid.

ım ranges from 40 to more
ation is greater than 60
ches below the upper

f 10YR or 2.5Y, value of 4 to
. It is 4 to 8 inches thick.
strongly acid to medium acid,
as been limed.
e of 10YR or 2.5Y, value of 4
Few to many mottles in
v are in this horizon. It is silty
/. Reaction ranges from very
id.
ors similar to those of the
, clay loam, or silty clay loam.
gly acid to mildly alkaline.

sts of somewhat poorly
soils. These soils formed in
vium. The soils are on the
ges from 0 to 1 percent.
series are coarse-silty,
ic Hapludalfs.
re near Guyton, Libuse, and
on and Wrightsville soils are
more poorly drained than the
ly well drained Libuse soils
ietops and have a fragipan.
silt loam, about 13 miles
east of intersection of
ad 2250, 51 feet north of
sec. 14, T. 23 N., R. 5 E.

own (10YR 4/3) silt loam;
yed leaves, pine needles, and
r part of the horizon; few fine
ottles; weak medium
cture; friable; many fine roots;
/ acid; clear wavy boundary.
ht yellowish brown (10YR
ercent light brownish gray
2); common medium faint
6/6) mottles; weak medium
cture; friable; common fine
d very fine pores; interfingers
in width extend through this
lack concretions; few hard
nmon soft brown masses;
r irregular boundary.
ale brown (10YR 6/3) silt
ght brownish gray (10YR 6/2)
medium faint yellowish
tles; weak medium
cture; friable; few fine roots;
terfingers of A2 material 1/2
a depth of 48 inches;

common fine and medium black concretions; few fine brown concretions; strongly acid; clear wavy boundary.

B21t—48 to 54 inches; yellowish brown (10YR 5/4) silty clay loam; few fine faint gray and light brownish gray mottles; moderate medium subangular blocky structure; firm; few fine roots; common fine pores; common fine and medium black concretions; common soft medium and coarse brown masses; common thin patchy clay films; common fine and medium pockets of light gray silt loam; strongly acid; clear wavy boundary.

B22t—54 to 76 inches; yellowish brown (10YR 5/4) silt loam; many medium distinct light brownish gray (10YR 6/2), and few medium distinct gray (10YR 5/1) mottles; weak medium subangular blocky structure; friable; few patchy clay films; common fine and coarse black and brown masses; strongly acid.

The thickness of the solum ranges from 60 to 80 inches. Base saturation is greater than 35 percent at a depth of 50 inches below the upper boundary of the argillic horizon. The soil is very strongly acid or strongly acid throughout, except where limed. The effective cation-exchange capacity of this soil is 50 percent or more saturated with exchangeable aluminum in the control section to a depth of 30 inches or more.

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

The B part of the B&A horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is silt loam or loam. Common to many mottles are in shades of gray or brown.

The A part of the B&A horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 3. It is silt or silt loam and contains less clay than the B part of the B&A horizon.

The B2t horizon has hue of 10YR, value of 4 to 6, and chroma of 3 to 6. It is silty clay loam, loam, or silt loam.

Gallion Series

The Gallion series consists of well drained, moderately permeable soils. These soils formed in loamy alluvium deposited by the Arkansas River. These soils are on natural levees bordering the Bayou Bonne Idee, Coulee Bayou, and other former channels and distributaries of the Arkansas River. Slope ranges from 0 to 2 percent.

The soils of the Gallion series are fine-silty, mixed, thermic Typic Hapludalfs.

Gallion soils commonly are near Hebert, Mer Rouge, Perry, Portland, Rilla, and Sterlington soils. The Hebert soils are in lower positions and are more poorly drained. Mer Rouge soils are in similar positions and have thick, darker surface and upper subsoil layers. Perry and Portland soils are in lower positions and are more clayey. Rilla and Sterlington soils are in higher positions and are more acid.

ı Bonne Idee and the Boeuf
ıges from 1 to 3 percent, but
ʻcent in places.
series are fine-silty, mixed,

are near Dexter, Forestdale,
ls. Dexter soils are in higher
r subsoil. Forestdale and
itions and have a clayey
ebert soils are more poorly
ɔsitions.
ll silt loam, in an area of Idee-
).5 miles southeast of Mer
ːenter of parish road 5605, 52
8 feet north of fence line;
20 N., R. 8 E.

10YR 4/3) silt loam; weak
ılar structure; friable; common
s; few fine brown concretions;
ar smooth boundary.
ı (10YR 5/3) silt loam;
brown (7.5YR 4/4) mottles;
ılar blocky structure; friable;
ːs; thin patchy clay films on
e brown concretions; very
wavy boundary.
vn (10YR 5/3) silty clay loam;
brown (7.5YR 4/4) mottles;
ar blocky structure parting to
angular blocky; firm; few fine
thin distinct discontinuous clay
and in pores; common
ĸ and brown concretions; very
wavy boundary.
ɔwn (10YR 5/3) silt loam;
wn (7.5YR 4/4) mottles; weak
ocky structure; friable; few
ıtchy clay films on faces of
ł coarse brown and black
ŋgly acid; gradual wavy

ellowish brown (10YR 5/6) and
ım; vertical streaks, 1 to 3
er of light brownish gray (10YR
ake up about 30 percent of the
prismatic structure parting to
ular blocky; yellowish brown
y material is friable and brown
ittle; few fine roots; thin patchy
peds; few fine pores; few fine
ːretions; very strongly acid;
y.
rown (7.5YR 4/4) fine sandy
m faint brown (7.5YR 5/4)
nd pockets of grayish brown
ɔrownish gray (10YR 6/2)

loamy fine sand; weak coarse subangular blocky structure; friable; few very fine roots; thin patchy clay films on faces of peds; few fine pores; very strongly acid; clear smooth boundary.

IIB3—56 to 72 inches; dark yellowish brown (10YR 4/4) fine sandy loam; common medium distinct grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) streaks and mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid.

The thickness of the solum ranges from 60 to 80 inches or more. Base saturation is greater than 45 percent at a depth of 50 inches below the upper boundary of the B horizon.

The Ap or A1 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is 4 to 7 inches thick and ranges from very strongly acid to medium acid, except where limed.

The Bt horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. Mottles in shades of yellow, gray, and brown range from none to many. Texture is silt loam, clay loam, loam, or silty clay loam. Reaction ranges from very strongly acid to medium acid.

The IIBt horizon has hue of 5YR, 7.5YR, or 10YR; value of 4 to 6; and chroma of 3 to 6. It is fine sandy loam, silt loam, or loam. Reaction ranges from very strongly acid to slightly acid.

Groom Series

The Groom series consists of poorly drained, moderately slowly permeable soils. These soils formed in loamy alluvium or mixed loess and loamy alluvium. They are on low stream terraces. Slope is dominantly less than 1 percent.

The soils of the Groom series are fine-silty, siliceous, thermic Aeric Ochraqualfs.

Groom soils commonly are near Guyton, Litro, Mollicy, Perry, Portland, and Wrightsville soils. Guyton soils are in local drainageways and are grayer throughout than Groom soils. Litro, Perry, and Portland soils are in lower positions and are more clayey throughout. The somewhat poorly drained Mollicy soils are on low ridges. Wrightsville soils are in similar positions and contain more clay in the subsoil.

Typical pedon of Groom very fine sandy loam, 9 miles northwest of Bastrop, 246 feet east of north-south field road, 57 feet south of east-west field road; NW1/4NW1/4, sec. 27, T. 22 N., R. 4 E.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) very fine sandy loam; weak medium subangular blocky structure; friable; few fine and very fine roots; neutral; abrupt smooth boundary.

B1g—5 to 12 inches; gray (10YR 6/1) loam; many medium distinct dark yellowish brown (10YR 4/4) mottles; weak medium subangular blocky structure; friable; few very fine roots; extremely acid; gradual wavy boundary.

B21tg—12 to 26 inches; gray (10YR 6/1) silt loam; many medium distinct yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; few very fine roots in upper part; thin patchy clay films on faces of most peds; extremely acid; gradual wavy boundary.

B22t—26 to 33 inches; yellowish brown (10YR 5/6) silt loam; many coarse dstinct gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23tg—33 to 48 inches; gray (10YR 5/1) silty clay loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak coarse subangular blocky structure; firm; few cup-shaped clay bands 2 to 5 millimeters thick; thin patchy clay films; few medium and coarse concretions of iron-manganese; few pockets of calcium sulfate crystals 1 to 3 millimeters in diameter; extremely acid; gradual wavy boundary.

B24tg—48 to 78 inches; gray (10YR 5/1) silty clay loam; many coarse distinct brown (7.5YR 5/4) mottles; weak medium subangular blocky structure; firm; few cup-shaped clay bands 2 to 5 millimeters thick; thin patchy clay films; few fine brown and black concretions of iron-manganese; common black stains and black masses; few pockets of white calcium sulfate crystals; extremely acid.

The thickness of the solum ranges from 60 to 90 inches or more. Reaction ranges from extremely acid to strongly acid throughout, except where the soil has been limed. Plow layers that have been limed have a reaction ranging from medium acid to neutral. The effective cation-exchange capacity is 50 to 90 percent saturated with exchangeable aluminum in the control section to a depth of about 30 inches or more. Exchangeable sodium percentage ranges from about 10 to 40 percent below a depth of 40 inches.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. It is 3 to 8 inches thick. Texture is very fine sandy loam or silt loam.

The B1 horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Mottles in shades of brown range from few to many. It is silt loam, loam, or very fine sandy loam.

The B21t horizon has the same color range as the B1 horizon. It is silt loam, loam, or silty clay loam.

The B22t horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Mottles in shades of gray and brown range from few to many. It is silty clay loam, loam, or silt loam.

The B23t and B24t horizons have hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. Mottles in

brown and yellow range from few to many. It
loam, loam, or silt loam.

Series

ton series consists of poorly drained, slowly
soils. These soils formed in loamy alluvium.
n broad, level and slightly depressional areas
uplands and on the flood plains of streams
rrace uplands. Slope is less than 1 percent.
s of the Guyton series are fine-silty, siliceous,
pic Glossaqualfs.
soils are closely associated with Bussy,
rizzell, Libuse, Perry, Portland, and Tillou soils.
rately well drained Bussy and Libuse soils are
ositions and have a fragipan. The well drained
ils are on narrow, natural levees along stream
The somewhat poorly drained Frizzell and
are in higher positions. The Perry and
oils are in similar positions and are more
ughout.
pedon of Guyton silt loam, 1 mile north of
195 feet northwest of bridge on gravel road,
rtheast of center of gravel road;
/1/4, sec. 32, T. 23 N., R. 6 E.

inches; brown (10YR 4/3) silt loam; weak
m subangular blocky structure; friable; many
nd medium roots; very strongly acid; clear
th boundary.
o 13 inches; light brownish gray (10YR 6/2) silt
common medium distinct dark yellowish brown
4/4) mottles; weak medium subangular
structure; friable; few fine and medium roots;
edium brown concretions; very strongly acid;
wavy boundary.
to 23 inches; light brownish gray (10YR 6/2)
am; few fine distinct yellowish brown mottles;
medium subangular blocky structure; friable;
ne roots; few fine pores; few fine and medium
concretions; very strongly acid; clear irregular
dary.
to 32 inches; grayish brown (10YR 5/2) silt
(B); few fine faint yellowish brown and brown
es; moderate medium subangular blocky
ure; friable; few small roots; thin patchy clay
on faces of peds; few medium and fine brown
etions; few medium soft black masses;
es of light grayish brown (10YR 6/2) silt loam
m 1/2 inch to 2 inches in width make up
20 percent of the horizon; strongly acid; clear
boundary.
to 42 inches; grayish brown (10YR 5/2) silty
oam; few medium faint yellowish brown (10YR
mottles; moderate medium subangular blocky
ure; firm; common fine and very fine pores; few
atchy clay films on faces of peds and in pores;
in light gray (10YR 7/2) silt coats between
some peds; common fine, medium, and coarse black and brown concretions; strongly acid; clear smooth boundary.

B3g—42 to 60 inches; light brownish gray (10YR 6/2) silt loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few thin patchy clay films on faces of most peds; few fine and very fine black and brown concretions; strongly acid.

The thickness of the solum ranges from 50 to 80 inches. Base saturation is greater than 35 percent at a depth of 50 inches below the upper boundary of the B horizon. The effective cation-exchange capacity of this soil is 50 percent or more saturated with exchangeable aluminum in the control section to a depth of 30 inches or more.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 or 3. It is 3 to 8 inches thick and ranges from very strongly acid to medium acid, except where limed.

The A2g horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. Mottles, in shades of brown or gray, range from few to many. Texture is silt loam or loam. Reaction ranges from very strongly acid to medium acid.

The B part of the B&A horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It is silty clay loam or silt loam with few to common mottles in shades of brown and gray. It is extremely acid to medium acid.

The A part of the B&A horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 or 2. It is silt loam, and contains less clay than the B part of the B&A horizon. Reaction ranges from very strongly acid to medium acid.

The B2tg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It is silty clay loam, silt loam, or loam and ranges from very strongly acid to medium acid.

The B3g horizon has colors and textures similar to the B2tg horizon. It ranges from very strongly acid in the upper part to neutral in the lower part of the horizon.

Haggerty Series

The Haggerty series consists of somewhat poorly drained, moderately rapidly permeable soils. These soils formed in loamy and sandy sediments. They are on low stream terraces and old lake beaches within the flood plains of the Ouachita River. Slope is dominantly less than 1 percent, but ranges to as much as 2 percent.

The soils of the Haggerty series are coarse-loamy, siliceous, thermic Aeric Ochraqults.

Haggerty soils are near Groom, Litro, Mollicy, and Perry soils. Groom and Mollicy soils are in slightly higher positions and contain more clay in the subsoil. Litro and

of 3 to 6, and
ickness is 6
e sand or silty

ue of 10YR,
ture of all B
sand with less
e B2t horizon
oma of 3 to 6.
ed.
of 6 or 7, and
f brown or red.
of 6 to 8, and
f brown.
and.

t poorly
s. These soils
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ppes of natural
you Bonne
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ss than 1
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ilty, mixed,

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subsoil. Mer
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e in lower
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loam; weak
very friable;
brown
oundary.
0YR 6/2) silt
yellowish brown
bangular
and fine roots;
gly acid; clear

5/2) loam;
faces of peds;
vnish gray
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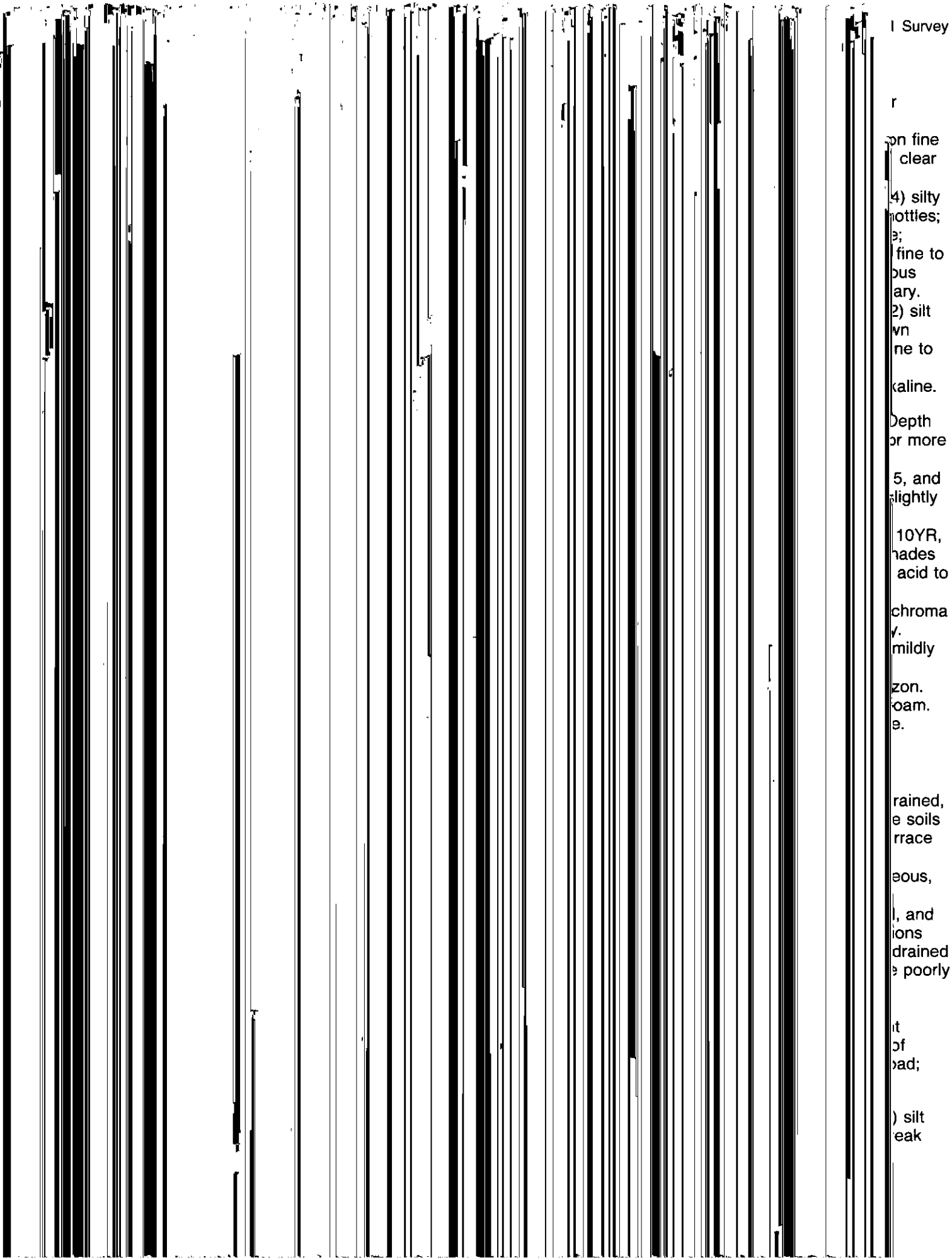


fine granular structure; friable; common fine and medium roots; medium acid; clear smooth boundary.

B1—4 to 7 inches; yellowish brown (10YR 5/4) silt loam; common fine distinct brown mottles; weak medium subangular blocky structure; friable; common fine roots; strongly acid; clear smooth boundary.

B21t—7 to 20 inches; strong brown (7.5YR 5/6) silt loam; few medium distinct brown (7.5YR 5/4) mottles; weak medium subangular blocky structure; friable; thin patchy clay films; few fine roots; strongly acid; clear smooth boundary.

B22t—20 to 27 inches; strong brown (7.5YR 5/6) silt loam; few medium distinct yellowish brown (10YR 5/4) and few medium distinct reddish brown (5YR 5/4) mottles; weak medium and coarse subangular blocky structure; friable; few fine roots; few fine pores; thin patchy clay films; strongly acid; clear wavy boundary.

Bx1—27 to 40 inches; yellowish brown (10YR 5/6) silt loam; few medium distinct pale brown (10YR 6/3) and few fine distinct light grayish brown mottles; strong coarse prismatic structure; firm and brittle; common fine pores; cracks between prisms filled with gray (10YR 5/1) silt loam (1 cm thick); thin distinct discontinuous clay films on faces of prisms; few fine roots between prisms; few fine brown and black concretions; strongly acid; gradual wavy boundary.

Bx2—40 to 51 inches; yellowish brown (10YR 5/6) silt loam; few medium faint dark yellowish brown (10YR 4/6) and few medium distinct gray (10YR 6/1) mottles; moderate coarse prismatic structure; about 80 percent of horizon is firm and brittle; cracks between prisms filled with gray (10YR 5/1) silt loam (1 to 2 cm thick); few fine roots between peds; few fine pores; thin distinct discontinuous clay films on faces of peds; few fine black concretions; strongly acid; gradual wavy boundary.

Bx3—51 to 60 inches; yellowish brown (10YR 5/6) silt loam; common medium distinct red (2.5YR 4/6) mottles; strong coarse prismatic structure; firm and brittle; gray (10YR 5/1) silty clay loam between peds; thin discontinuous clay films on faces of peds and in pores; common fine spheroidal pores inside peds; strongly acid; gradual wavy boundary.

B3—60 to 70 inches; yellowish brown (10YR 5/6) silt loam; common medium distinct gray (10YR 6/1) and common medium prominent light reddish brown (2.5YR 6/4) mottles; weak coarse prismatic structure; firm and slightly brittle; few fine roots between peds; gray (10YR 5/1) seams between peds; thin patchy clay films on faces of peds; very strongly acid.

The thickness of the solum ranges from 60 to 90 inches. Depth to the fragipan ranges from 18 to 36 inches. The effective cation-exchange capacity of this soil is 50 percent or more saturated with exchangeable aluminum in the control section to a depth of 30 inches or more.

The A1 or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. It is 3 to 8 inches thick and ranges from strongly acid to slightly acid, except in areas where limed.

The B1 horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. It is strongly acid or medium acid.

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

The Bx horizon has colors, textures, and a reaction similar to the B2t horizon. It is mottled in shades of gray, yellow, brown, or red. Typically, the sand content is greater in the fragipan.

The B3 horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. It is silt loam, loam, or sandy clay loam. Reaction ranges from very strongly acid to medium acid.

Litro Series

The Litro series consists of poorly drained, very slowly permeable soils. These soils formed in clayey alluvium. They are on the flood plains of the Ouachita River. Slope is dominantly less than 1 percent, but ranges from 0 to 2 percent.

The soils of the Litro series are fine, mixed, acid, thermic Vertic Haplaquepts.

The Litro soils commonly are near Groom, Haggerty, Mollicy, and Perry soils. The poorly drained Groom soils and the somewhat poorly drained Haggerty and Mollicy soils are in slightly higher positions. Perry soils are in similar positions and are more alkaline.

Typical pedon of Litro clay, 14 miles northwest of Bastrop, 0.2 mile north of drainage ditch, 500 feet northeast of Ouachita River, 24 feet east of woods road; SW1/4SW1/4, sec. 20, T. 23 N., R. 4 E.

A1—0 to 4 inches; dark gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; common very fine, fine, and medium roots; very strongly acid; clear smooth boundary.

B21g—4 to 14 inches; light gray (10YR 6/1) clay; common medium distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; firm; few fine and medium roots; few fine pores and root channels; very strongly acid; clear smooth boundary.

B22g—14 to 40 inches; gray (10YR 5/1) clay; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine and medium roots; few very fine pores; very strongly acid; gradual wavy boundary.

B23g—40 to 70 inches; light brownish gray (10YR 6/2) clay; common medium distinct yellowish brown

re; friable; few fine pores; few thin patchy clay
ew fine concretions of lime; calcareous
moderately alkaline; clear smooth boundary.
50 inches; yellowish brown (10YR 5/4) silt
few fine faint brown and few fine distinct
brown mottles; weak medium subangular
structure; friable; few fine pores; few thin
clay films on vertical faces of peds; common
res; few concretions of lime 2 to 5 cm in
er; calcareous matrix; moderately alkaline;
smooth boundary.
64 inches; brown (7.5YR 5/4) silt loam;
on medium faint strong brown (7.5YR 5/6)
w medium distinct yellowish brown (10YR
ottles; weak medium subangular blocky
re; friable; few medium concretions of lime;
eous matrix; moderately alkaline.

kness of the solum ranges from 40 to 80
se saturation is greater than 80 percent at a
inches below the upper boundary of the B
ickness of the mollic epipedon ranges from
ches.
horizon has hue of 7.5YR or 10YR, value of 2
hroma of 1 or 2. It is 4 to 10 inches thick and
d or neutral. The Ap horizon is silt loam or silty

horizon, within the mollic epipedon, has the
range as the Ap horizon. It is silt loam, silty
or clay loam. Reaction ranges from slightly
derately alkaline.
horizon below the mollic epipedon has hue of
5YR, value of 4 or 5, and chroma of 3 to 6. It
loam, clay loam, loam, very fine sandy loam,
. Reaction ranges from slightly acid to
alkaline.
horizon has the same color and reaction as
art of the B2t horizon. It is silt loam, loam, or
ndy loam.

Series

icy series consists of somewhat poorly
derately slowly permeable soils. These soils
amy alluvium or in mixed loess and loamy
ney are on low stream terraces. Slope is
1 to 3 percent, but ranges to as much as 5

of the Mollicy series are fine-loamy,
ermic Aquic Hapludults.
oils commonly are near the Groom, Guyton,
itro, Perry, Portland, and Wrightsville soils.
drained Groom and Wrightsville soils are in
oncave positions. The poorly drained Guyton
drainageways. The Haggerty soils are in
ons and are more sandy throughout than

ry friable); extremely

ter than 55 inches.
ngly acid, except
effective cation-
nt saturated with
ol section, to a

alue of 3 to 5, and
is 3, thickness is 6
loam, but it is silt

or 7.5YR, value of 4
is sandy clay loam,
orizon is mottled in

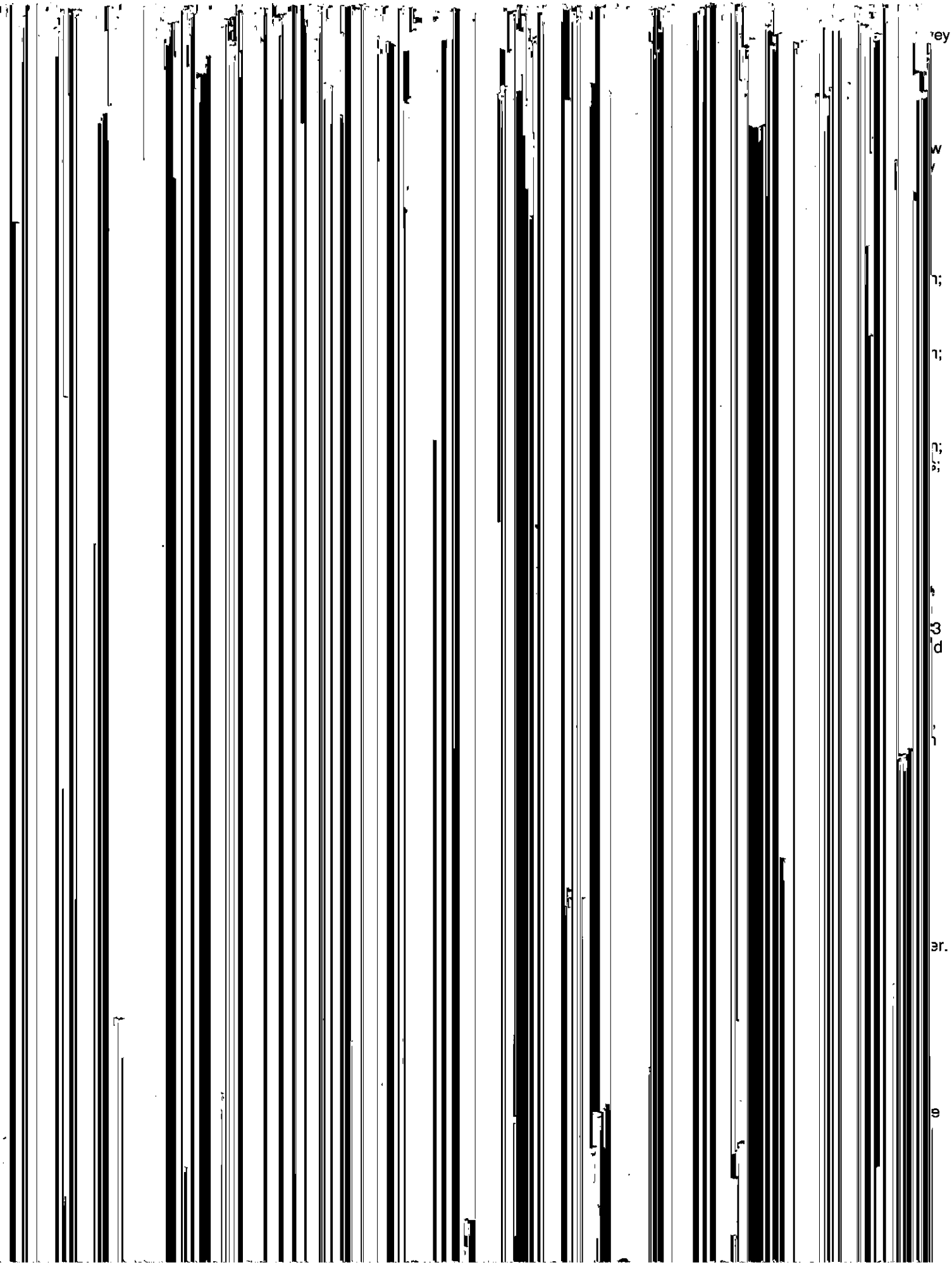
7.5YR, or 2.5YR;
6. It is clay loam,
rizon is mottled in

y drained, very
formed in clayey
River and possibly
ckswamp areas on
er, Bayou Bonne
d distributaries of the
0 to 3 percent.
ery-fine,
ertic Haplaquepts.
e Forestdale, Gallion,
land, and Rilla soils.
r positions and
do the Perry soils.
are in higher
Portland soils are in
der throughout.
1 percent slopes, 10
0 feet north of
N., R. 8 E.

clay; common
7.5YR 5/6) mottles;
olocky structure; very
d; abrupt smooth

5/1) clay; many
7.5YR 5/6) mottles;
olocky structure; firm;
3 to 5 inches wide
of horizon; strongly

5/1) clay; many
7.5YR 4/6) and few



or clay loam and ranges from extremely acid to strongly acid.

The IIB3 horizon has colors and textures similar to the B2t horizon. Reaction ranges from very strongly acid to slightly acid.

The IIC horizon has colors similar to the B horizon. Texture is loam, silty clay loam, or silty clay. Reaction ranges from very strongly acid to neutral.

Sterlington Series

The Sterlington series consists of well drained, moderately permeable soils. These soils formed in loamy alluvium deposited by the Arkansas River. They are on natural levees bordering Bayou Bonne Idee and other former channels and distributaries of the Arkansas River. Slope ranges from 0 to 3 percent.

The soils of the Sterlington series are coarse-silty, mixed, thermic Typic Hapludalfs.

Sterlington soils commonly are near Gallion, Hebert, Mer Rouge, Perry, Portland, and Rilla soils. Gallion, Hebert, Mer Rouge, and Rilla soils are in similar positions and are fine-silty. The Perry and Portland soils are in backswamps and are more clayey throughout.

Typical pedon of Sterlington silt loam, 0 to 1 percent slopes, 1 mile northwest of Jones, 845 feet northwest of fence corner, 9 feet south of fence; NE1/4NE1/4, sec. 17, T. 23 N., R. 8 E.

Ap—0 to 8 inches; brown (7.5YR 4/4) silt loam; weak medium platy and weak medium subangular blocky structure; very friable; few fine roots; medium acid; abrupt smooth boundary.

B2t—8 to 22 inches; reddish brown (5YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; few very fine pores; thin patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

A&B—22 to 28 inches; brown (7.5YR 5/4) very fine sandy loam (A) and dark brown (7.5YR 4/4) very fine sandy loam (B); weak medium subangular blocky structure; very friable; few medium roots; few very fine pores; very strongly acid; clear smooth boundary.

B'2t—28 to 57 inches; reddish brown (5YR 5/4) silt loam; streaks and pockets of A2 material; weak medium subangular blocky structure; friable; few fine and very fine pores; thin nearly continuous clay films; very strongly acid; clear smooth boundary.

C—57 to 75 inches; strong brown (7.5YR 5/6) very fine sandy loam; common medium distinct reddish brown (5YR 5/4) mottles; massive; very friable; strongly acid.

Thickness of the solum ranges from 40 to 60 inches. Base saturation ranges from 60 to 80 percent at a depth of 50 inches below the upper boundary of the B horizon.

ructure; friable; few fine roots; few fine pores; thin
atchy clay films on faces of peds; common fine
ack iron-manganese concretions; very strongly
id; clear wavy boundary.
15 to 20 inches; yellowish brown (10YR 5/4) silt
am (60 percent B); light brownish gray (10YR 6/2)
t loam (40 percent A); common medium distinct
rk yellowish brown (10YR 4/4) and common
arse distinct light brownish gray (10YR 6/2)
ottles; weak medium subangular blocky structure;
able; few medium roots; few fine pores; common
e black iron-manganese concretions; few black
reaks; few brittle bodies; the A2 material is
terspersed within the peds; very strongly acid;
adual wavy boundary.
20 to 30 inches; light gray (10YR 7/2) silt loam
0 percent A) and yellowish brown (10YR 5/4) silt
am (40 percent B); weak medium subangular
ocky structure; friable; few fine roots; common fine
res; few fine black and brown iron-manganese
ncretions; about 20 percent brittle bodies that are
to 2 inches in diameter; strongly acid; abrupt
egular boundary.
—30 to 40 inches; yellowish brown (10YR 5/4) silty
ay loam; 10 percent light brownish gray (10YR
2) silt coatings and streaks; weak medium
bangular blocky structure; firm, plastic and sticky;
any fine pores inside of peds; thin patchy clay
ms; common black and brown concretions that are
to 3 cm in diameter; about 20 percent firm brittle
dies that are up to 5 cm in diameter; ped interiors
terspersed with silt; strongly acid; abrupt irregular
undary.
—40 to 48 inches; brownish yellow (10YR 6/6)
d light yellowish brown (10YR 6/4) silty clay loam;
oderate medium and coarse subangular blocky
ructure; firm; few fine roots; common very fine
res; thin patchy clay films on peds and in pores;
w fine and medium black and brown concretions;
w thin silt coats on peds; strongly acid; gradual
avy boundary.
—48 to 66 inches; light yellowish brown (10YR
4) silt loam; weak very coarse subangular blocky
ructure; very firm and hard; slightly brittle; few fine
ots between peds; common very fine pores in
eds; thick continuous clay films on vertical faces of
eds; thin continuous clay films on horizontal faces
peds; common very fine black stains on faces of
eds; few fine and medium brown concretions; few
edium pale brown (10YR 6/3) silt pockets; slightly
id; gradual wavy boundary.
—66 to 76 inches; yellowish brown (10YR 5/4) silt
am; common medium faint dark yellowish brown
0YR 4/4) and light brownish gray (10YR 6/2)
ottles; weak coarse and very coarse subangular
ocky structure; few fine roots; many fine pores;

clay films; few fine black
olack stains; neutral.

e solum ranges from 40 to 100
eaction in the A1, B&A, A&B, and
from medium acid to very strongly
irface layer where limed. The
lower horizons ranges from
alkaline. The effective cation-
50 percent or more saturated with
m in the control section to a depth

zons have hue of 10YR, value of 3
to 4. Thickness of the A1 horizon
hes.
s hue of 10YR, value of 4 to 6, and
tles are in shades of gray, yellow,
silt loam or silty clay loam.
horizons have Bt parts with the
e as the above B2t horizon. The
YR, value of 5 to 7, and chroma of

s hue of 10YR, value of 4 to 6,
Mottles are in shades of gray,
re is silt loam or silty clay loam.

cessively drained to somewhat
n an escarpment between terrace
ns. The area is dissected by many
ies. Slope ranges from 5 to 30

variable, but it is dominantly loamy.
oamy fine sand to clay throughout.
es from dark grayish brown to red
ges from very strongly acid to

es

ies consists of poorly drained, very
s. These soils formed in loamy and
mixed with loess. They are on low
e ranges from 0 to 1 percent.
ghtsville series are fine, mixed,
ualfs.
mmonly are near Groom, Guyton,
tland soils. The Groom and Guyton
sitions and are loamy throughout.
her positions and have a fragipan.
ils are on flood plains and are

rightsville silt loam, about 7 miles
3,880 feet west of intersection of
d 2205, 120 feet south of gravel
sec. 17, T. 22 N., R. 5 E.

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

A2g—2 to 11 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; friable; few fine and common medium roots; common fine pores; very strongly acid; clear irregular boundary.

Bg&Ag—11 to 19 inches; gray (10YR 6/1) silty clay loam (Bg); 30 percent tongues, 2 to 6 inches wide, of light brownish gray (10YR 6/2) silt loam (Ag) extending through the horizon; common medium distinct strong brown (7.5YR 5/6) and few fine distinct brown mottles; silty clay loam material has moderate medium subangular blocky structure and firm consistence; silt loam material has weak medium subangular blocky structure and friable consistence; few fine pores in silt loam material; very strongly acid; gradual wavy boundary.

B2tg—19 to 28 inches; light brownish gray (10YR 6/2) silty clay; many coarse faint grayish brown (10YR 5/2) and common medium distinct yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; firm; tongues of light gray (10YR 7/1) silt loam, 1 to 3 inches wide, extend to a depth of 27 inches; few fine roots; few fine pores; common discontinuous clay films on faces of peds; some clay bands as thick as 5 mm are in crayfish casts; very strongly acid; clear smooth boundary.

B3tg—28 to 43 inches; light brownish gray (10YR 6/2) silty clay; common medium faint brownish yellow (10YR 6/6) and few fine distinct yellowish red mottles; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few fine roots; common patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

C—43 to 73 inches; gray (10YR 6/1) silty clay; common medium distinct yellowish brown (10YR 5/6) and few medium faint grayish brown (2.5Y 5/2) mottles; massive; firm; few fine black concretions; slightly acid.

The thickness of the solum ranges from 40 to 65 inches. Base saturation is greater than 35 percent at a depth of 50 inches below the upper boundary of the Bt horizon. Reaction ranges from extremely acid to strongly acid throughout, except in the C horizon. Reaction in the C horizon ranges from strongly acid to moderately alkaline.

The A1 horizon has hue of 10YR, value of 4 to 5, and chroma of 2. It is 1 to 4 inches thick.

The A2g horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. Mottles in shades of gray and brown range from few to many. The A2g horizon is silt loam or silty clay loam.

The Btg horizon has the same colors and mottles as the A2g horizon. Tongues of A2g material, 1 to 6 inches wide, extend down into the Btg horizon. Mottles in shades of gray, brown, or red range from few to common. The Btg horizon is silty clay loam, silty clay, or clay.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2, or it is neutral. Mottles in shades of gray and brown range from few to many. The C horizon is silty clay loam, silty clay, or clay.

The Wrightsville soils in Morehouse Parish are taxadjuncts to the Wrightsville series because they have reddish mottles in the argillic horizon. This difference, however, does not affect the use and behavior of these soils for present and expected land uses.

Yorktown Series

The Yorktown series consists of very poorly drained, very slowly permeable soils. These soils formed in clayey alluvium deposited by the Arkansas River. They are in former stream channels and backswamps on flood plains near Bayou Bonne Idee and Bayou Bartholomew. Slope ranges from 0 to 1 percent.

The soils of the Yorktown series are very-fine, montmorillonitic, nonacid, thermic Typic Fluvaquents.

Yorktown soils commonly are near Hebert, Perry, and Portland soils. The somewhat poorly drained Hebert soils are in higher positions and are loamy throughout. The poorly drained Perry soils and the somewhat poorly drained Portland soils are in slightly higher positions and have vertic properties.

Typical pedon of Yorktown clay, frequently flooded, 1/4 mile northwest of Jones; NW1/4NE1/4; sec. 21; T. 23 N., R. 8 E.

O1—2 to 0 inches; dark brown (7.5YR 3/2) partially decomposed leaves, roots, and twigs; strongly acid; abrupt smooth boundary.

A1—0 to 7 inches; dark gray (10YR 4/1) clay; weak coarse subangular blocky structure; very sticky and firm; many fine roots; very strongly acid; clear smooth boundary.

B21g—7 to 17 inches; dark gray (10YR 4/1) clay; common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; very sticky and firm; few fine roots; very strongly acid; clear smooth boundary.

B22g—17 to 30 inches; gray (10YR 5/1) clay; common medium prominent strong brown (7.5YR 5/6) and few medium faint dark gray (10YR 4/1) mottles; moderate medium subangular blocky structure; very sticky and very firm; few fine roots; very strongly acid; clear smooth boundary.

B23g—30 to 48 inches; gray (10YR 5/1) clay; common medium prominent strong brown (7.5YR 5/6) and common medium prominent yellowish red (5YR 5/6) mottles in lower part of horizon; moderate medium subangular blocky structure; very sticky and very firm; few fine roots; very strongly acid; clear wavy boundary.

B3—48 to 60 inches; reddish brown (5YR 4/4) clay; few fine prominent gray mottles; weak moderate blocky structure; firm; very strongly acid.

The thickness of the solum ranges from 50 to 80 inches. Depth to the B3 horizon ranges from 42 to 60 inches.

The A1 horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1. It is 4 to 10 inches thick and ranges from very strongly acid to medium acid.

The B2g horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1. Mottles are in shades of red and brown. The B2g horizon ranges from very strongly acid to medium acid.

The B3 horizon has hue of 5YR, value of 4 or 5, and chroma of 3 or 4. Mottles are gray. Reaction ranges from very strongly acid to slightly acid.

The Yorktown soils in Morehouse Parish are taxadjuncts to the Yorktown series because they are more acid than the defined range for the series. This difference, however, does not affect the behavior of these soils for present and expected land uses.

Formation of the Soils

Dr. Bobby J. Miller, Department of Agronomy, Agricultural Experiment Station, Louisiana State University, helped prepare this section.

In this section the processes and factors of soil formation are described as they relate to the soils in the parish.

Processes of Soil Formation

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

Important soil-forming processes include those that result in (1) *additions* of organic, mineral, and gaseous materials to the soil, (2) *losses* of these same materials from the soil, (3) *translocations* of materials from one point to another within the soil, and (4) physical and chemical *transformations* of mineral and organic materials within the soil (*35*). Typically, many processes take place simultaneously in soils. Examples include accumulation of organic matter, development of soil structure, formation and translocation of clay, and leaching of bases from some soil horizons. The contribution of a particular process may change over a period of time. For example, installation of drainage and water-control systems can change the length of time soils are flooded or saturated with water.

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

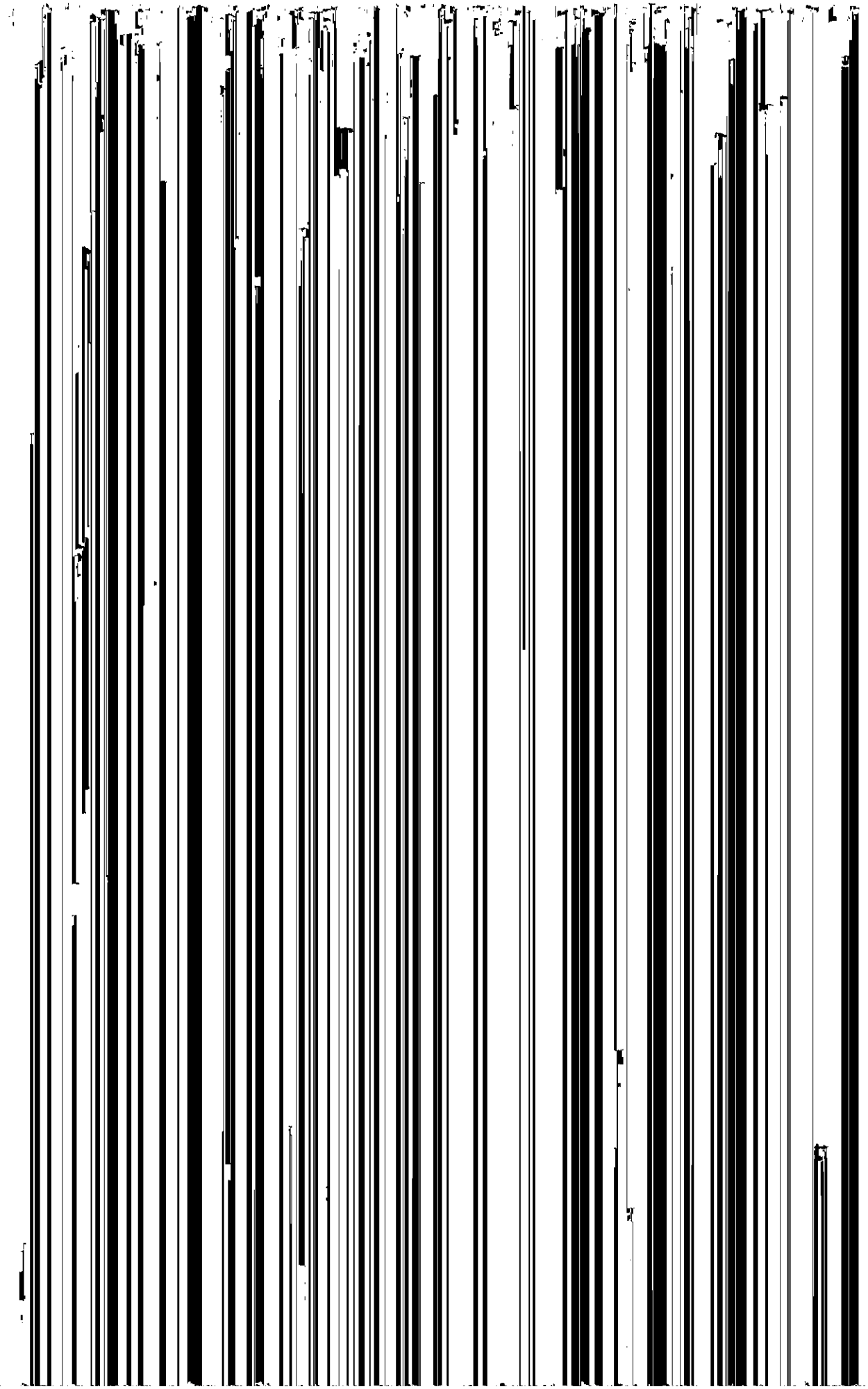
The addition of alluvial sediment at the surface has been important in the formation of some soils in the parish. The added sediment provides new parent material in which the processes of soil formation can occur. In many cases, accumulation of new material has been faster than the processes of soil formation could appreciably alter the material. This is evident as depositional strata in the lower horizons of many of the soils that developed in alluvial sediments.

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

The poorly drained and very poorly drained soils in the parish have horizons in which reduction and segregation of iron and manganese compounds have been important processes. Reducing conditions have prevailed for long periods of time in these poorly aerated horizons. Consequently, the somewhat soluble reduced forms of iron and manganese are predominant over the less soluble oxidized forms. Reduced compounds of these elements can result in the gray colors that are characteristic of the Bg and Cg horizons in such soils as Guyton and Perry soils. In the more soluble reduced forms, appreciable amounts of iron and manganese may be removed from the soils or translocated from one position to another within the soil by water. The presence of browner mottles in predominantly gray horizons indicate segregations and local concentrations of oxidized iron compounds as a result of alternating oxidizing and reducing conditions.

Loss of components has occurred to some extent during the formation of all the soils. Water moving through the soil has leached soluble bases and any free carbonates that may have been initially present. The effects of leaching are least pronounced in soils developed in relatively young parent materials that were initially high in bases. These include the Gallion, Mer Rouge, Perry, Portland, and Yorktown soils.

The formation, translocation, and accumulation of clay in the profile have been important processes during the development of all soils in the parish except the Allemands, Cascilla, Litro, Perry, Portland, and Yorktown



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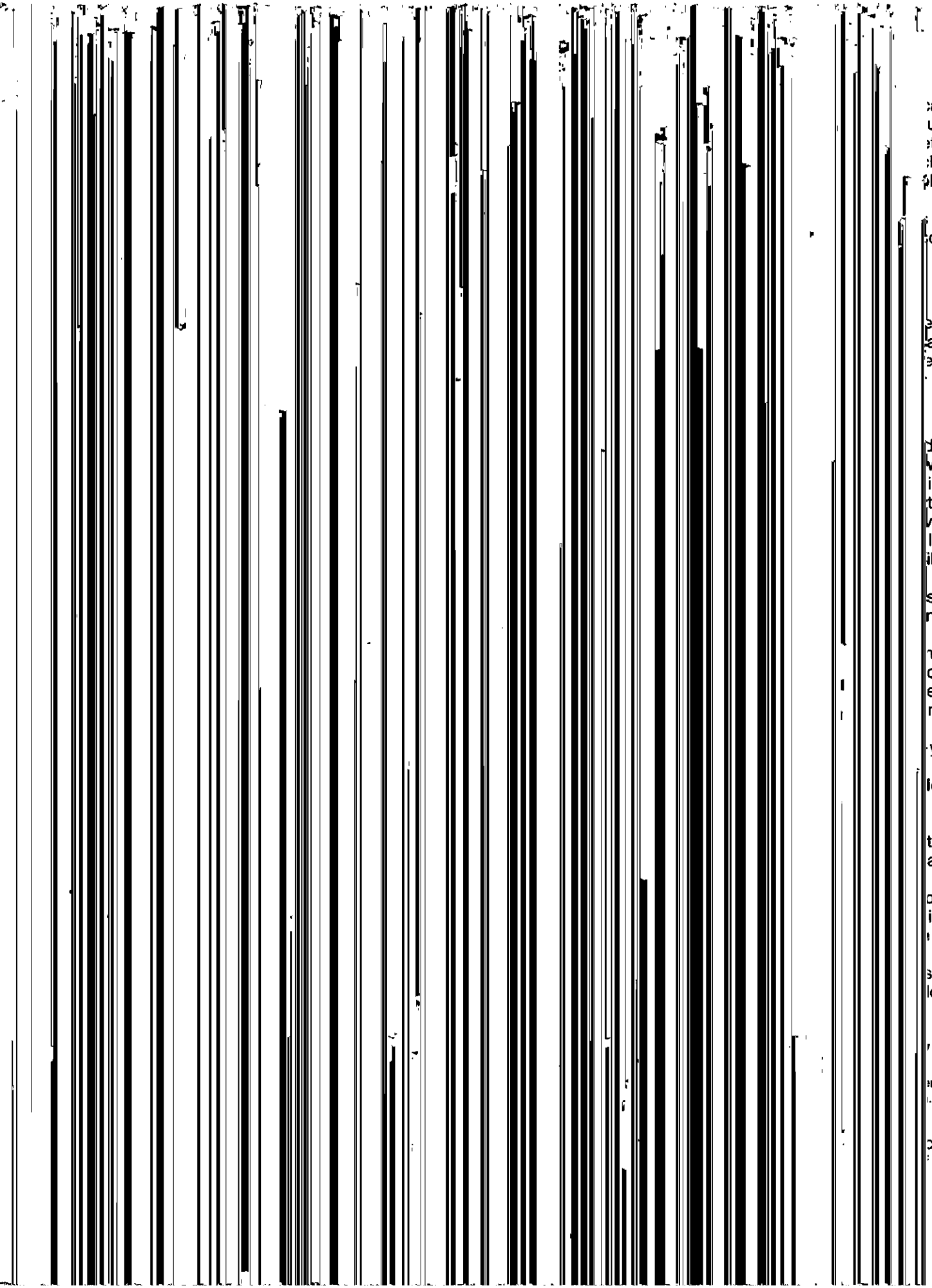

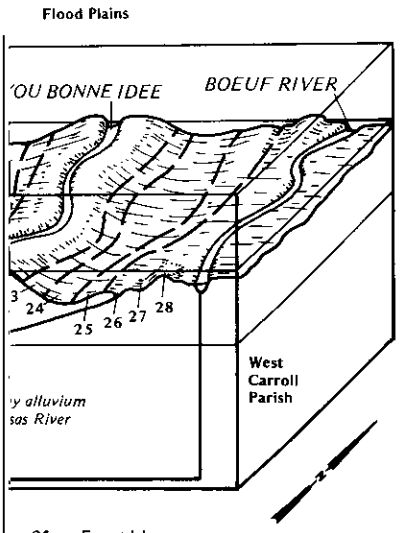

25. Forestdale
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28. Dexter
29. Yorktown

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o units. All of the soils in these
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ascilla soils have silt loam textures
d have no horizons of secondary
of illuvial clays. They typically occupy
are closer to the stream channel and are
than the Guyton soils. In places, however,
ith surfaces identical to the Guyton soils
nized beneath the Cascilla soils.

ns conducted during the course of the
ed that both the eastern and western
the terrace uplands are mantled by uniform
that have a low sand content. Rehage (*31*)
ickness, distribution, and other
s of these materials in detail. He found that
have a maximum thickness of approximately
he eastern edge and are thinnest at less
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erosion, the sediments form a continuous
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ther with particle size he concluded that
n deposits. Rehage demonstrated that the
of the deposits were ancient alluvial plains
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hita River alluvial deposits, probably the
rrace now present in the area, was a local
me of the eolian deposits in the western
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the loess deposit has not been definitely
0, 11, 17, 21, 32, 36, 37, 46). There is little
s older than the Peoria Loess that mantles
dge in adjoining West Carroll Parish (*22*) to
racteristics of the loess and soils
the loess are similar to those described by
Daniels (*39*) in a Pre-Prairie, post-
oess in Evangeline Parish.
Bussy, Debute, Frizzell, and Libuse soils
loess deposits. Tillou and Bussy soils
thickest loess and occur mostly on the
ent of the terrace uplands. Debute, Frizzell,
e more prevalent on the western segment
ss mantle is relatively thin.
) compared physical, chemical, and
characteristics of soils developed in Peoria
ose developed in the older loess. Those in
s have thicker sola, redder colors in the
the sola, greater clay maxima and greater
maxima in the argillic horizon, larger clay
sola, and greater thickness of sola.
ey have a more acid reaction, a lower

base status, and larger quantities of exchangeable A1 and extractable acidity. Soils developed in the older loess also contain fewer weatherable minerals in the silt-size fraction and have larger amounts of kaolinite and soil-vermiculite and lesser amounts of smectite and micaceous clays than soils developed in Peoria Loess.

Pleistocene Terrace Deposits

The oldest soil parent materials in Morehouse Parish are in the terrace uplands. Their surface exposure is almost entirely restricted to the east-facing escarpment separating the terrace uplands from the lower-lying alluvial plain. Small areas are also exposed on steep side slopes in the most dissected areas of the terrace uplands. Saucier (*33*) has identified this area as a Prairie Age terrace deposit formed about 80,000 to 100,000 years ago. Most of the soils in the terrace uplands, however, developed in younger eolian deposits.

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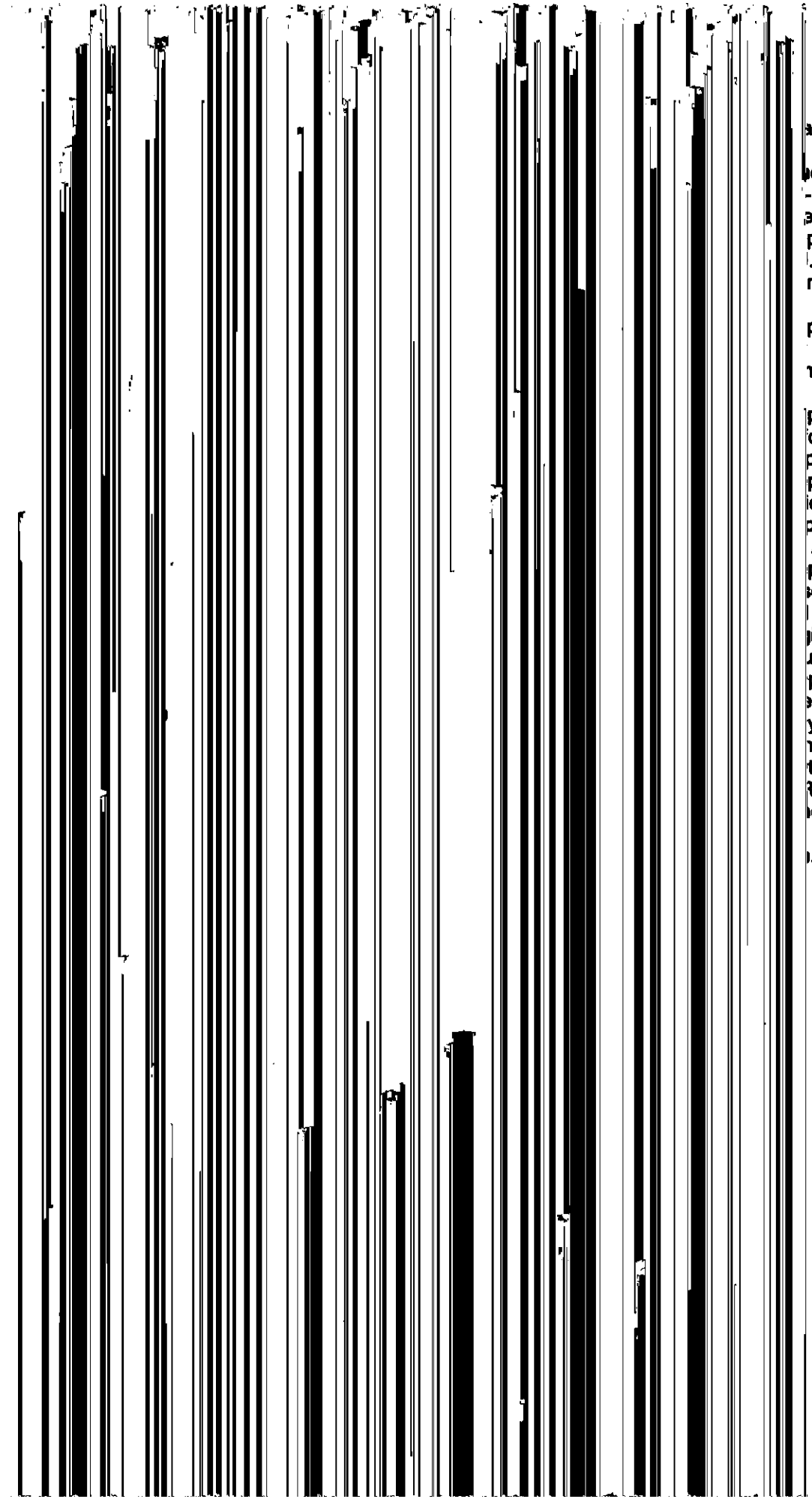

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Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

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

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

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

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

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is in part a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.

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

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

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake in inches per hour is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

hosphorus, potassium, calcium,
n, sulfur, iron, manganese, copper, boron,
btained from the soil and carbon,
and oxygen obtained from the air and

r. Plant and animal residue in the soil in
ges of decomposition.
il. The unconsolidated organic and
terial in which soil forms.
ual natural soil aggregate, such as a
prism, or a block.
allest volume that can be called "a soil."
three dimensional and large enough to
ly of all horizons. Its area ranges from
100 square feet (1 square meter to 10
ters), depending on the variability of the

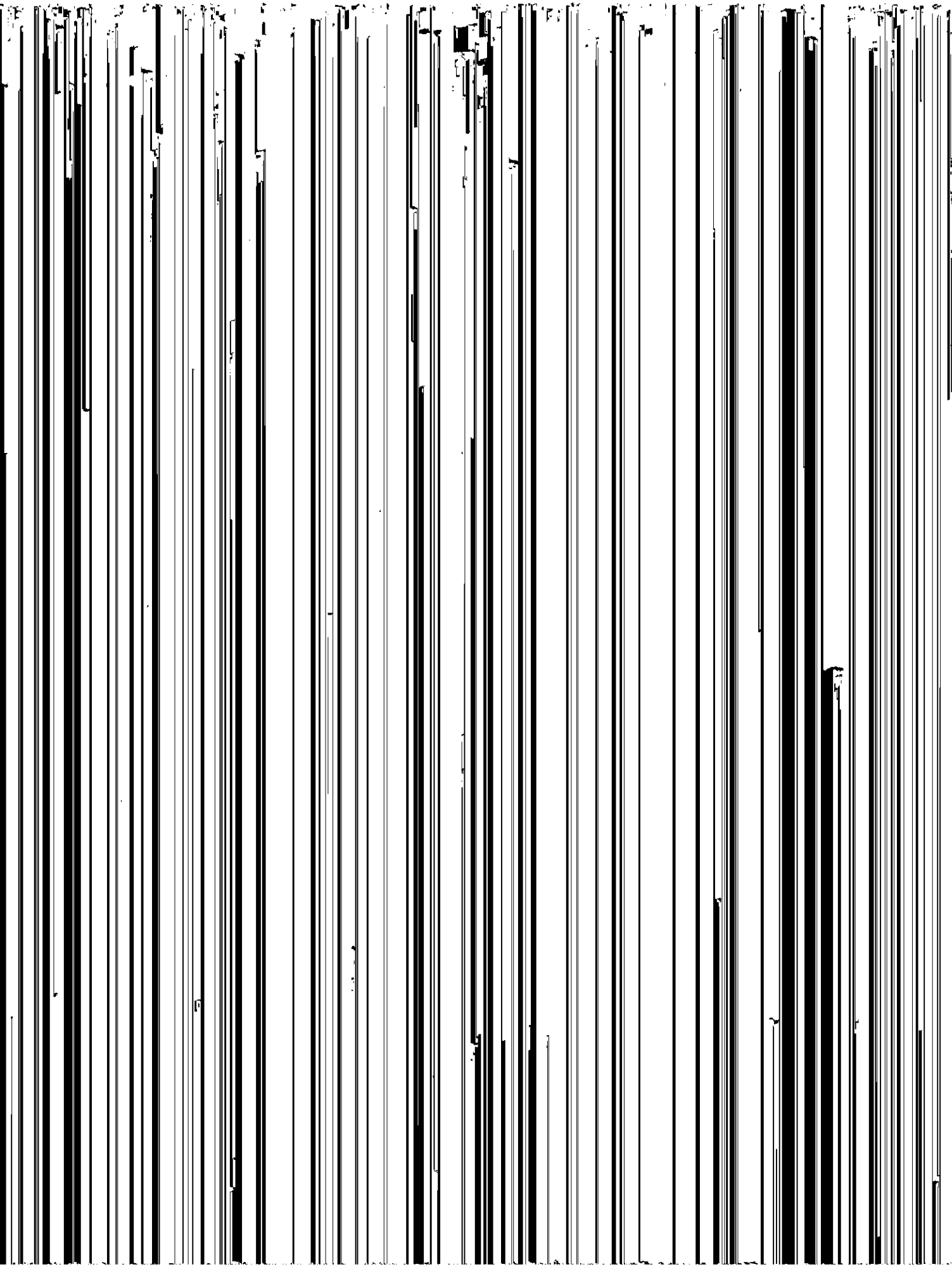
he downward movement of water through

in tables). The slow movement of water
e soil adversely affecting the specified

The quality of the soil that enables water
ownward through the profile. Permeability
ed as the number of inches per hour that
es downward through the saturated soil.
scribing permeability are:

low	less than 0.06 inch
	0.06 to 0.2 inch
ately slow	0.2 to 0.6 inch
ate	0.6 inch to 2.0 inches
ately rapid	2.0 to 6.0 inches
	6.0 to 20 inches
apid	more than 20 inches

subdivision of a soil series based on
at affect its use and management. For
slope, stoniness, and thickness.
umerical designation of acidity and
n soil. (See Reaction, soil.)
es). Formation of subsurface tunnels or
vities by water moving through the soil.
ex. The numerical difference between the
and the plastic limit; the range of moisture
thin which the soil remains plastic.
The moisture content at which a soil
rom semisolid to plastic.
mpacted layer formed in the soil directly
plowed layer.
ding water on soils in closed depressions.
soils are artificially drained, the water can
ed only by percolation or
spiration.
soil. The capability of a soil for producing
d plant or sequence of plants under
anagement.
vertical section of the soil extending
its horizons and into the parent material.



particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

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

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

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

Tables

CROPS

obtained from the
rvation Service, USDA.
he figure was not available]

1974 Yield	Yield/acre
80,983 Bales	1.03 Bales
---	---
912,709 Bu.	18.7 Bu.
113,681 Bu.	40.4 Bu.
16,470 Bu.	22.1 Bu.
2,642,738 Lbs.	1,934.7 Lbs.
9,612 Bu.	32.8 Bu.

E AND PRECIPITATION

)d 1951-73 at Bastrop, Louisiana]

Average number of growing degree days*	Precipitation				
	Average	2 years in 10 will have--		number of days with 0.10 inch or more	Average snowfall
		Less than--	More than--		
	In	In	In		In
80	4.42	2.19	6.24	7	.1
121	4.66	2.45	6.47	7	.5
267	5.06	2.45	7.19	8	.0
498	5.13	2.42	7.34	7	.0
738	4.71	2.20	6.76	6	.0
918	3.58	1.09	5.58	5	.0
1,032	4.18	2.30	5.70	7	.0
1,004	3.01	1.23	4.45	5	.0
813	3.29	1.22	4.94	6	.0
518	2.47	.43	4.04	4	.0
213	4.61	2.41	6.40	5	.0
114	5.25	2.48	7.50	8	.0
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6,316	50.37	40.83	59.44	75	.6

nt growth. It can be calculated by adding the
, and subtracting the temperature below which
.

DATES IN SPRING AND FALL

corded in the period 1951-73
uisiana]

Temperature		
° F ower	28° F or lower	32° F or lower
ch 8	March 19	March 29
ary 25	March 11	March 23
ary 4	February 23	March 10
ber 17	November 3	October 23
ber 24	November 9	October 29
ber 8	November 21	November 8

OWING SEASON

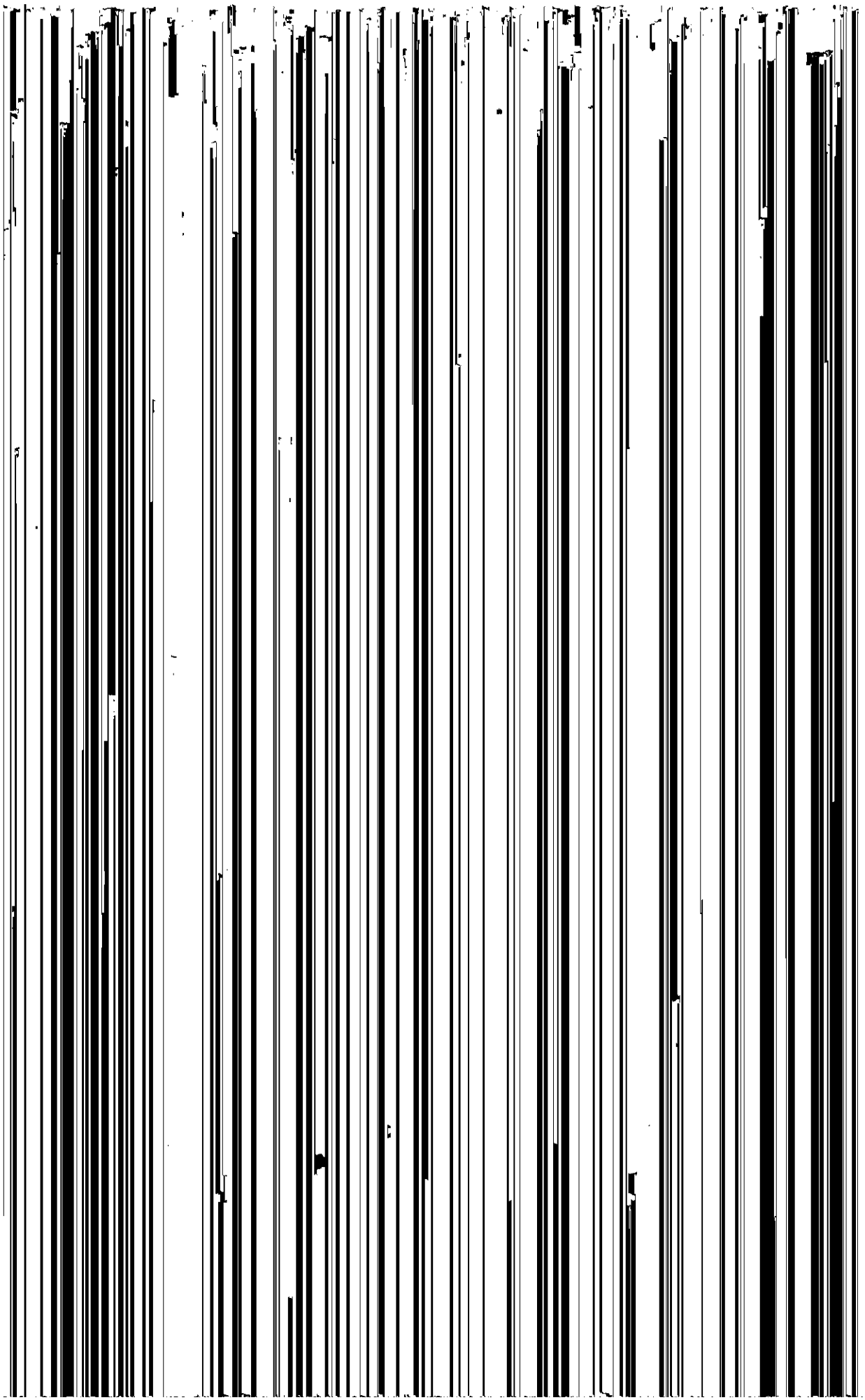
ecorded in the period 1951-73
ouisiana]

gth of growing season if daily minimum temperature is--		
her an ° F	Higher than 28° F	Higher than 32° F
ys	Days	Days
69	238	213
80	249	223
02	270	242
29	292	261
65	303	271

TABLE 5.--SUITABILITY AND LIMITATIONS OF GENERAL SOIL MAP UNITS

Map unit	Percent of area	Cultivated crops	Pasture	Woodland	Urban uses
1. Hebert-Sterlington-Rilla	27.0	Well suited-----	Well suited----	Well suited---	Moderately well suited: wetness, shrink-swell, low strength for roads, moderate and moderately slow permeability. Poorly suited to sanitary facilities.
2. Gallion-Mer Rouge-Hebert	5.0	Well suited-----	Well suited----	Well suited---	Moderately well suited: wetness, shrink-swell, low strength for roads, moderate and moderately slow permeability. Poorly suited to sanitary facilities.
3. Perry-Portland	32.0	Moderately well suited: wetness poor tilth.	Well suited----	Moderately well suited: wetness, moderate seedling mortality, equipment limitations.	Severely limited: wetness, flooding, shrink-swell, low strength for roads, very slow permeability.
4. Perry-Portland, Flooded	2.5	Poorly suited: wetness, flooding, poor tilth.	Moderately well suited: wetness, flooding.	Well suited---	Severely limited: wetness, flooding, shrink-swell, low strength for roads, very slow permeability.
5. Forestdale-Idee-Goodwill	2.5	Moderately well suited: wetness medium fertility, poor tilth.	Well suited----	Well suited---	Poorly suited: wetness, shrink-swell, low strength for roads, moderately slow and very slow permeability.
6. Litro-Haggerty	1.5	Poorly suited: wetness in spring, droughtiness, in fall, low fertility.	Moderately well suited: droughtiness, low fertility.	Moderately well suited: severe seedling equipment limitations.	Poorly suited: wetness, flooding, shrink-swell, very slow permeability.

					iited: ooding.
					nited: vetness.
					vell ness, ll, h for y.
					vell ness, ink-swell, h for y. ed to acilities.
					nited: looding, ll, low or roads, slow and ty.
					nited: looding, th for erately ability.



	Acres	Percent
-	386	0.1
-	25,124	4.9
-	1,794	0.3
-	6,873	1.3
-	919	0.2
-	3,074	0.6
-	28,594	5.5
-	13,740	2.7
-	271	0.1
-	6,974	1.3
-	11,713	2.3
-	3,036	0.6
-	1,624	0.3
-	14,564	2.8
-	7,848	1.5
-	1,530	0.3
-	1,404	0.3
-	474	0.1
-	1,114	0.2
-	57,873	11.2
-	4,931	1.0
-	4,980	1.0
-	7,948	1.5
-	4,458	0.9
-	347	0.1
-	8,603	1.7
-	8,235	1.6
-	5,347	1.0
-	5,375	1.0
-	1,483	0.3
-	140	*
-	9,649	1.9
-	107,187	20.7
-	1,545	0.3
-	6,974	1.3
-	9,945	1.9
-	18,035	3.5
-	5,313	1.0
-	16,280	3.1
-	1,944	0.4
-	15,524	3.0
-	21,363	4.1
-	934	0.2
-	16,745	3.2
-	18,983	3.7
-	5,289	1.0
-	6,679	1.3
-	2,158	0.4
-	5,646	1.1
-	6,410	1.2
-	517,379	100.0

TABLE 7.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Cotton lint	Soybeans	Corn	Rice	Common bermudagrass	Improved bermudagrass
	Lb	Bu	Bu	Bu	AUM*	AUM*
Bs---- Bussy	450	18	60	---	5.0	10.0
Db---- Debute	700	20	75	---	7.0	13.0
De---- Debute	550	18	60	---	5.0	10.0
Dx---- Dexter	700	30	80	---	7.0	13.0
Fo---- Forestdale	475	30	50	130	6.5	12.0
Fr---- Frizzell	425	15	50	70	5.0	9.0
Ga---- Gallion	875	40	90	---	7.0	15.0
Gb---- Gallion	825	40	85	---	7.0	13.0
Gm---- Groom	---	10	---	70	4.0	6.0
Gp---- Groom-Mollicy	---	10	---	70	4.0	6.0
Gu---- Guyton	---	15	---	75	5.0	9.0
Gy---- Guyton-Cascilla	---	---	---	---	5.0	---
Ha, He.---- Haggerty	---	10	---	---	2.0	4.0
Hg, Hh---- Haggerty	---	---	---	---	2.0	---
Hr---- Hebert	750	35	75	120	7.0	14.0
Ht---- Hebert	650	35	70	120	6.5	13.5
HY---- Hebert and Perry	---	---	---	---	5.0	---
Id---- Idee-Forestdale	550	30	60	110	6.0	12.0
Ie---- Idee-Goodwill	635	30	75	80	6.0	12.0
La---- Lafe	---	---	---	---	3.0	---
Lb---- Libuse	450	18	60	---	5.0	

See footnote at end of table.

TABLE 7.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Cotton lint	Soybeans	Corn	Rice	Common bermuda-grass	Improved bermudagrass
	Lb	Bu	Bu	Bu	AUM*	AUM*
Le---------- Libuse	425	15	55	---	4.5	10.0
Lo---------- Litro	---	---	20	90	4.0	7.0
Me---------- Mer Rouge	900	40	95	---	8.0	16.0
Mo---------- Mer Rouge	850	40	90	---	7.5	15.0
Mr---------- Mer Rouge-Gallion	890	40	93	---	7.6	15.3
Pc, Pe---------- Perry	475	35	50	130	6.0	12.0
Pg---------- Perry	425	30	45	120	5.5	---
Pn---------- Portland	650	35	55	130	7.5	12.0
Po---------- Portland	600	35	50	130	7.0	10.0
Pr---------- Portland	550	30	45	115	6.5	---
Ra---------- Rilla	875	40	90	120	7.0	14.0
Rb---------- Rilla	850	37	85	100	7.0	13.5
Rh---------- Rilla-Hebert	825	36	85	---	7.0	13.5
Se---------- Sterlington	850	35	85	---	7.0	14.0
Sr---------- Sterlington	825	30	80	---	7.0	13.5
St---------- Sterlington-Hebert	805	30	80	---	7.0	14.0
To---------- Tillou	425	15	50	70	5.0	9.0
UB:** Udalfs.						
Bussy----------	---	---	---	---	4.5	7.0
Wr---------- Wrightsville	---	15	---	80	4.0	---

* Animal-unit-month: The amount of forage or feed required to feed one animal (one cow, one horse, one mule, five sheep, or five goats) for 30 days.
** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--CAPABILITY CLASSES AND SUBCLASSES

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

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	62,515	---	---	---	---
II	202,012	38,399	163,613	---	---
III	180,328	9,154	171,174	---	---
IV	32,883	6,873	26,010	---	---
V	19,791	---	19,791	---	---
VI	5,636	5,289	---	347	---
VII	2,158	---	2,158	---	---
VIII	---	---	---	---	---

TABLE 9.--WOODLAND MANAGEMENT AND PRODUCTIVITY

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

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
Bs Bussy	2o7	Slight	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum	90 85 90	Loblolly pine, slash pine, sweetgum, yellow-poplar.
Db, De Debute	2o7	Slight	Slight	Slight	Slight	Loblolly pine Shortleaf pine Sweetgum Southern red oak Cherrybark oak	90 85 90 80 85	Loblolly pine, slash pine, sweetgum, cherrybark oak, yellow-poplar.
Dx Dexter	2o7	Slight	Slight	Slight	Slight	Loblolly pine Eastern cottonwood Cherrybark oak Willow oak Sweetgum Nuttall oak	110 100 90 90 90 90	Loblolly pine, eastern cottonwood, cherrybark oak, sweetgum, willow oak.
Fo Forestdale	1w6	Slight	Severe	Moderate	Slight	Green ash Eastern cottonwood Cherrybark oak Nuttall oak Water oak Willow oak Sweetgum	78 100 94 99 90 94 100	Green ash, eastern cottonwood, Nuttall oak, sweetgum, American sycamore.
Fr Frizzell	2w8	Slight	Moderate	Slight	Slight	Loblolly pine Sweetgum Water oak	90 90 ---	Loblolly pine, slash pine, sweetgum, yellow-poplar.
Ga, Gb Gallion	2o4	Slight	Slight	Slight	Slight	Green ash Cherrybark oak Sweetgum Water oak Pecan American sycamore Eastern cottonwood	80 95 83 --- --- --- 100	Eastern cottonwood, American sycamore.
Gm, Go Groom	3w9	Slight	Moderate	Moderate	Moderate	Overcup oak Common persimmon Loblolly pine Willow oak Water oak Sweetgum Cherrybark oak	80 --- 80 80 80 80 80	Green ash, Nuttall oak, loblolly pine, willow oak.
Gp,* Gs:* Groom	3w9	Slight	Moderate	Moderate	Moderate	Overcup oak Common persimmon Loblolly pine Willow oak Water oak Sweetgum Cherrybark oak	80 --- 80 80 80 80 80	Green ash, Nuttall oak, loblolly pine, willow oak.
Mollicy	3w7	Moderate	Moderate	Moderate	Slight	Loblolly pine Sweetgum Water oak Willow oak Common persimmon	85 85 85 85 ---	Loblolly pine, willow oak, sweetgum, green ash.
Gu Guyton	2w9	Slight	Severe	Moderate	Moderate	Loblolly pine Slash pine Sweetgum Green ash Southern red oak Water oak	90 90 --- --- --- ---	Loblolly pine, sweetgum.

ed tivity	Site index	Trees to plant
---	90	Loblolly pine,
---	90	sweetgum.
---	---	
---	---	
---	---	
---	---	
---	112	Cherrybark oak,
---	110	eastern cottonwood,
---	93	loblolly pine,
---	114	Nuttall oak,
---	104	sweetgum, American
---	102	sycamore, yellow-
---	115	poplar.
---	---	Eastern cottonwood,
		American sycamore.
---	---	Eastern cottonwood,
---	95	American sycamore.
---	95	
---	90	
---	90	
---	---	
---	90	
---	---	
---	---	Eastern cottonwood,
---	95	American sycamore.
---	95	
---	90	
---	90	
---	---	
---	90	
---	---	
---	85	Eastern cottonwood,
---	70	sweetgum.
---	---	
---	---	
---	---	
---	105	Cherrybark oak,
---	100	eastern cottonwood,
---	100	sweetgum, water oak,
---	95	yellow-poplar.
---	78	Green ash, eastern
---	100	cottonwood, Nuttall
---	94	oak, sweetgum,
---	99	American sycamore.
---	90	
---	94	
---	100	
---	105	Cherrybark oak,
---	100	eastern cottonwood,
---	100	sweetgum, water oak,
---	95	yellow-poplar.

ity		
Site index	Trees to plant	
100	Eastern cottonwood,	
100	green ash, Nuttall	
80	oak, sweetgum,	
95	American sycamore,	
100	yellow-poplar.	
95		
90		
95		
83	Loblolly pine,	
80	sweetgum,	
	yellow-poplar.	
80	Sweetgum, green ash,	
85	Nuttall oak, loblolly	
70	pine.	
80		
70		
80		
75	Baldcypress, green	
75	ash.	
70		
70		
60		
70		
70	Eastern cottonwood,	
90	American sycamore.	

95		

70	Eastern cottonwood,	
90	American sycamore.	

95		

80	Eastern cottonwood,	
95	American sycamore.	
83		

100		
---	Eastern cottonwood,	
90	sweetgum, green	
72	ash, water oak.	
92		

80	Green ash, eastern	
100	cottonwood, sweetgum,	
90	American sycamore.	
100	Eastern cottonwood,	
100	American sycamore.	
85		
100		

TABLE 9.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
Rh:*								
Rilla	2o4	Slight	Slight	Slight	Slight	Eastern cottonwood	100	Eastern cottonwood, American sycamore.
						Cherrybark oak	100	
						Nuttall oak	85	
						Sweetgum	100	
						Pecan	---	
						American sycamore	---	
Hebert	2w5	Slight	Moderate	Slight	Slight	Green ash	---	Eastern cottonwood, American sycamore.
						Eastern cottonwood	95	
						Cherrybark oak	95	
						Nuttall oak	90	
						Sweetgum	90	
						Pecan	---	
						Water oak	90	
						American sycamore	---	
Se, Sr Sterlington	2o4	Slight	Slight	Slight	Slight	Green ash	75	Eastern cottonwood.
						Eastern cottonwood	---	
						Cherrybark oak	95	
						Water oak	90	
						Pecan	---	
						Sweetgum	90	
St:*								
Sterlington	2o4	Slight	Slight	Slight	Slight	Green ash	75	Eastern cottonwood.
						Eastern cottonwood	---	
						Cherrybark oak	95	
						Water oak	90	
						Pecan	---	
						Sweetgum	90	
Hebert	2w5	Slight	Moderate	Slight	Slight	Green ash	---	Eastern cottonwood, American sycamore.
						Eastern cottonwood	95	
						Cherrybark oak	95	
						Nuttall oak	90	
						Sweetgum	90	
						Pecan	---	
						Water oak	90	
						American sycamore	---	
To Tillou	2w8	Slight	Moderate	Moderate	Moderate	Loblolly pine	86	Loblolly pine, slash pine, water oak, sweetgum.
						Water oak	86	
						Sweetgum	86	
UB:* Udalfs.								
Bussy	2o7	Slight	Slight	Slight	Slight	Loblolly pine	90	Loblolly pine, slash pine, sweetgum, yellow-poplar.
						Slash pine	85	
						Sweetgum	90	
Wr Wrightsville	3w9	Slight	Severe	Moderate	Moderate	Loblolly pine	80	Loblolly pine, sweetgum, water oak, willow oak.
						Sweetgum	80	
						Water oak	80	
Yo Yorktown	4w9	Slight	Severe	Severe	Severe	Baldcypress	70	Baldcypress, green ash, water tupelo.
						Water tupelo	---	
						Water hickory	---	
						Green ash	---	

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

ABLE 10.--RECREATIONAL DEVELOPMENT

oil features are defined in the Glossary. See text for definitions of
Absence of an entry indicates that the soil was not rated]

Picnic areas	Playgrounds	Paths and trails	Golf fairways
Severe: excess humus, percs slowly.	Severe: excess humus, percs slowly.	Severe: excess humus.	Severe: excess humus.
Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Slight.
Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
Slight----------	Moderate: slope.	Severe: erodes easily.	Slight.
Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Slight----------	Slight----------	Slight----------	Slight.
Slight----------	Slight----------	Slight----------	Slight.
Severe: wetness.	Severe: wetness.	Severe: wetness, erodes easily.	Severe: wetness.
Severe: wetness.	Severe: wetness.	Severe: wetness, erodes easily.	Severe: wetness.
Moderate: wetness, percs slowly.	Moderate: slope, wetness.	Severe: erodes easily.	Moderate: wetness.
Severe: wetness.	Severe: wetness, flooding.	Severe: wetness, erodes easily.	Severe: wetness, flooding.
Moderate: wetness, percs slowly.	Moderate: wetness, flooding.	Severe: erodes easily.	Moderate: wetness, flooding.
Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Gy:*					
Guyton	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Cascilla	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
Ha	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Haggerty					
He	Severe: too clayey, wetness, flooding.	Severe: too clayey, wetness.	Severe: too clayey, wetness.	Severe: too clayey, wetness.	Severe: too clayey, wetness.
Haggerty					
Hg	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.
Haggerty					
Hh	Severe: too clayey, flooding, wetness.	Severe: too clayey, wetness.	Severe: flooding, too clayey, wetness.	Severe: too clayey, wetness.	Severe: too clayey, flooding, wetness.
Haggerty					
Hr	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Hebert					
Ht	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Hebert					
HY:*					
Hebert	Severe: flooding.	Moderate: wetness, percs slowly.	Severe: flooding.	Severe: erodes easily.	Severe: flooding.
Perry	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
Id:*					
Idee	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: erodes easily.	Moderate: wetness.
Forestdale	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Ie:*					
Idee	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: erodes easily.	Moderate: wetness.
Goodwill	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
La	Severe: wetness, percs slowly, excess sodium.	Severe: wetness, excess sodium, percs slowly.	Severe: wetness, percs slowly, excess sodium.	Severe: wetness.	Severe: excess sodium, wetness.
Lafe					
Lb, Le	Moderate: percs slowly, wetness.	Moderate: percs slowly, wetness.	Moderate: slope, percs slowly, wetness.	Severe: erodes easily.	Moderate: wetness.
Libuse					

See footnote at end of table.

ATIONAL DEVELOPMENT--Continued

c areas	Playgrounds	Paths and trails	Golf fairways
s, ayey, slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
s, ayey, slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
e: slowly.	Moderate: percs slowly.	Slight----------	Slight.
e: slowly.	Moderate: percs slowly.	Slight----------	Slight.
e: slowly.	Moderate: percs slowly.	Slight----------	Slight.
----------	Slight----------	Severe: erodes easily.	Slight.
s, ayey, slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
s, ayey, slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
s, slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.
s, ayey, slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
s, ayey, slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
----------	Slight----------	Slight----------	Slight.
----------	Moderate: slope.	Severe: erodes easily.	Slight.
----------	Slight----------	Severe: erodes easily.	Slight.
e: s, slowly.	Moderate: wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
----------	Slight----------	Slight----------	Slight.
----------	Moderate: slope.	Severe: erodes easily.	Slight.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
St:*					
Sterlington	Slight	Slight	Slight	Severe: erodes easily.	Slight.
Hebert	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
To Tillou	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, erodes easily.	Severe: wetness.
UB:*					
Udalfs.					
Bussy	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Slight.
Wr Wrightsville	Severe: wetness, percs slowly, flooding.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Yo Yorktown	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, excess humus.	Severe: too clayey, excess humus, ponding.	Severe: ponding, too clayey, excess humus.	Severe: ponding, flooding, too clayey.

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

n entry indicates

ntial as habitat		
n- nd d- fe	Wood- land wild- life	Wetland wild- life
	Fair	Good
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Fair	Good
	Good	Fair
	Good	Very poor.
	Fair	Fair
	Fair	Fair
	Fair	Poor
	Fair	Good
	Fair	Good
	Good	Very poor.
	Fair	Very poor.
	Good	Fair
	Good	Fair
	Fair	Fair
	Good	Fair
	Fair	Good
	Good	Fair
	Good	Very poor.

TABLE 11.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
La---------- Lafe	Very poor.	Very poor.	Poor	Poor	Poor	Poor	Poor	Good	Very poor.	Poor	Fair
Lb, Le---------- Libuse	Good	Good	Good	---	Good	Good	Poor	Poor	Good	Good	Poor
Lo---------- Litro	Poor	Fair	Good	Fair	---	Fair	Good	Good	Fair	Fair	Good
Lt---------- Litro	Poor	Fair	Fair	Fair	---	Fair	Good	Good	Poor	Fair	Good
Me, Mo---------- Mer Rouge	Good	Good	Good	Good	---	Good	Poor	Poor	Good	Good	Poor
Mr:* Mer Rouge----------	Good	Good	Good	Good	---	Good	Poor	Poor	Good	Good	Poor
Gallion----------	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Pc, Pe---------- Perry	Fair	Fair	Fair	Good	---	Fair	Good	Good	Fair	Good	Good
Pg---------- Perry	Poor	Fair	Fair	Fair	---	Fair	Fair	Fair	Fair	Fair	Fair
Pn, Po, Pr---------- Portland	Good	Good	Good	Good	---	Good	Good	Good	Good	Good	Good
Ra, Rb---------- Rilla	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Rh:* Rilla----------	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Hebert----------	Good	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Se, Sr---------- Sterlington	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
St:* Sterlington--------	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Hebert----------	Good	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
To---------- Tillou	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
UB:* Udalfs----------	Poor	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Good	Very poor.
Bussy----------	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Wr---------- Wrightsville	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Yo---------- Yorktown	Very poor.	Very poor.	Very poor.	Poor	Poor	Poor	Poor	Good	Very poor.	Very poor.	Fair

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

TABLE 12.--BUILDING SITE DEVELOPMENT

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

Map symbol and soil name	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ad---------- Allemands	Severe: excess humus.	Severe: flooding, shrink-swell, low strength.	Severe: flooding, low strength.	Severe: low strength.	Severe: excess humus.
Bs---------- Bussy	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: low strength.	Slight.
Db---------- Debute	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
De---------- Debute	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
Dx---------- Dexter	Slight---------	Slight---------	Moderate: slope.	Severe: low strength.	Slight.
Fo---------- Forestdale	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, wetness, low strength.	Severe: wetness.
Fr---------- Frizzell	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Ga, Gb---------- Gallion	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Gm---------- Groom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
Go---------- Groom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
Gp:*					
Groom----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
Mollicy----------	Severe: wetness.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Moderate: wetness.
Gs:*					
Groom----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
Mollicy----------	Severe: wetness.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
Gu---------- Guyton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.

See footnote at end of table.

ITE DEVELOPMENT --Continued

Small commercial buildings	Local roads and streets	Lawns and landscaping
vere: etness, looding.	Severe: low strength, wetness, flooding.	Severe: wetness,
vere: looding.	Severe: low strength, flooding.	Severe: flooding.
vere: etness, looding.	Severe: wetness.	Severe: wetness.
vere: etness, looding.	Severe: wetness.	Severe: wetness.
vere: looding, etness.	Severe: flooding, wetness.	Severe: flooding, wetness.
vere: looding, etness.	Severe: flooding, wetness.	Severe: too clayey, flooding, wetness.
derate: etness, hrink-swell.	Severe: low strength.	Moderate: wetness.
vere: etness, looding.	Severe: low strength,	Severe: flooding.
vere: looding, etness, hrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
derate: etness, hrink-swell.	Severe: low strength.	Moderate: wetness.
vere: looding, etness, hrink-swell.	Severe: shrink-swell, wetness, low strength.	Severe: wetness.
derate: etness, hrink-swell.	Severe: low strength.	Moderate: wetness.
derate: hrink-swell.	Severe: low strength.	Slight.
vere: etness.	Severe: low strength, wetness.	Severe: excess sodium, wetness.
derate: etness.	Severe: low strength.	Moderate: wetness.
derate: lope, etness.	Severe: low strength.	Moderate: wetness.

TABLE 12.--BUILDING SITE DEVELOPMENT-Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Lo---------- Litro	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness.	Severe: wetness, too clayey.
Lt---------- Litro	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
Me, Mo---------- Mer Rouge	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Mr:* Mer Rouge---------	Moderate: wetness.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Gallion----------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Pc, Pe---------- Perry	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness, too clayey.
Pg---------- Perry	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, too clayey.
Pn---------- Portland	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness.
Po---------- Portland	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness, too clayey.
Pr---------- Portland	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, too clayey.
Ra, Rb---------- Rilla	Moderate: too clayey, wetness.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Rh:* Rilla----------	Moderate: too clayey, wetness.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Hebert----------	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
Se, Sr---------- Sterlington	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
St:* Sterlington------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
Hebert----------	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT-Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
To---------- Tillou	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
UB:* Udalfs.					
Bussy----------	Severe: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Severe: low strength.	Slight.
Wr---------- Wrightsville	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness, shrink-swell.	Severe: wetness.
Yo---------- Yorktown	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding, too clayey.

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

BLE 13.--SANITARY FACILITIES

features are defined in the Glossary. See text for definitions of and other terms. Absence of an entry indicates that the soil was able indicates the dominant soil condition but does not eliminate

ewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
rere: tness, epage, cess humus.	Severe: wetness, too clayey, excess humus.	Severe: seepage, wetness.	Poor: too clayey, wetness, excess humus.
rere: tness.	Moderate: wetness, too clayey.	Moderate: wetness.	Fair: too clayey, wetness.
rere: tness.	Severe: wetness.	Moderate: wetness.	Fair: wetness.
rere: epage.	Severe: seepage.	Severe: seepage.	Good.
rere: tness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
rere: tness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
lerate: epage.	Moderate: too clayey.	Slight----------	Fair: too clayey.
rere: looding, tness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
rere: looding, tness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
rere: looding, tness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
rere: looding, tness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
vere: looding, etness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
vere: looding, etness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
vere: etness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

TABLE 13.--SANITARY FACILITIES--Continued

tank tion ds	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
owly, .	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: wetness, flooding.	Poor: wetness.
.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: wetness.
, ter.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
owly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
owly, .	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: wetness, flooding.	Fair: too clayey, wetness.
, owly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
owly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
owly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
owly.	Severe: wetness.	Severe: wetness, excess sodium.	Severe: wetness.	Poor: wetness, excess sodium.
owly,	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
owly.	Severe: flooding, wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
, owly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
le.				

IES--Continued

Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ere: tness.	Severe: wetness.	Fair: wetness.
ere: tness.	Severe: wetness.	Fair: wetness.
erate: o clayey.	Slight----------	Fair: too clayey.
ere: tness, o clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
ere: ooding, tness, o clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
ere: tness, o clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
ere: ooding, tness, o clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
ere: tness.	Moderate: wetness.	Poor: thin layer.
ere: tness.	Moderate: wetness.	Poor: thin layer.
ere: tness.	Moderate: wetness.	Poor: thin layer.
ere: tness.	Severe: wetness.	Fair: too clayey, wetness.
ght----------	Slight----------	Good.
ght----------	Slight----------	Good.
ght----------	Slight----------	Good.
ere: etness.	Severe: wetness.	Fair: too clayey, wetness.
ere: etness.	Severe: wetness.	Poor: wetness.

TABLE 13.--SANITARY FACILITIES--Continued

tank tion ls	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
owly.	Severe: slope, wetness.	Moderate: wetness, too clayey.	Moderate: wetness.	Fair: too clayey, wetness.
owly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
owly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.

up unit for composition and behavior characteristics of the map unit.

..---CONSTRUCTION MATERIALS

ures are defined in the Glossary. See text for definitions of mprobable." Absence of an entry indicates that the soil was indicates the dominant soil condition but does not eliminate

Sand	Gravel	Topsoil
probable: xcess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Fair: too clayey.
probable: xcess fines.	Improbable: excess fines.	Poor: wetness.
probable: xcess fines.	Improbable: excess fines.	Poor: wetness.
probable: xcess fines.	Improbable: excess fines.	Good.
probable: xcess fines.	Improbable: excess fines.	Poor: wetness.
probable: xcess fines.	Improbable: excess fines.	Poor: wetness.
probable: xcess fines.	Improbable: excess fines.	Good.
obable----------	Improbable: excess fines.	Poor: wetness.
obable----------	Improbable: excess fines.	Poor: too clayey, wetness.
obable----------	Improbable: excess fines.	Poor: wetness.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Hh---------- Haggerty	Poor: wetness.	Probable----------	Improbable: excess fines.	Poor: too clayey, wetness.
Hr---------- Hebert	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ht---------- Hebert	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
HY:*				
Hebert----------	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Perry----------	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
Id:*				
Idee----------	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Forestdale----------	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Ie:*				
Idee----------	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Goodwill----------	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
La---------- Lafe	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, excess sodium.
Lb, Le---------- Libuse	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
Lo, Lt---------- Litro	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
Me---------- Mer Rouge	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim.
Mo---------- Mer Rouge	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, area reclaim.
Mr:*				
Mer Rouge----------	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim.
Gallion----------	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Roadfill	Sand	Gravel	Topsoil
: strength, ness, ink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
: strength, ness, ink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
: strength, ness, ink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
: strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
: strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
: strength, ness.	Improbable: excess fines.	Improbable: excess fines.	Good.
----------	Improbable: excess fines.	Improbable: excess fines.	Good.
----------	Improbable: excess fines.	Improbable: excess fines.	Good.
: strength, ness.	Improbable: excess fines.	Improbable: excess fines.	Good.
: strength, ness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
: strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
: strength, ness, ink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
: strength, ness, ink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

e map unit for composition and behavior characteristics of the map unit.

. See text for definitions of
e soil was not evaluated. The
ot eliminate the need for onsite

	es affecting--	
	Terraces and diversions	Grassed waterways
?. y.	Percs slowly.	Wetness, percs slowly.
y, pth.	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth, percs slowly.
y, pth.	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth, percs slowly.
y, pth.	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth, percs slowly.
ly.	Erodes easily	Erodes easily.
y, ly.	Wetness, percs slowly, erodes easily.	Wetness, erodes easily, percs slowly.
y, ly.	Erodes easily, wetness.	Erodes easily, percs slowly.
y	Erodes easily	Erodes easily.
---	Favorable------	Favorable.
ily.	Erodes easily, wetness.	Wetness, erodes easily.
lly,	Erodes easily, wetness.	Wetness, erodes easily.
lly.	Erodes easily, wetness.	Wetness, erodes easily
ily.	Erodes easily, wetness.	Erodes easily.
lly,	Erodes easily, wetness.	Wetness, erodes easily
ily.	Erodes easily, wetness.	Erodes easily.
ly, lly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily percs slowly.
ly, lly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily percs slowly.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Ay:*						
Cascilla	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily, flooding.	Erodes easily	Erodes easily.
Ba	Severe: seepage.	Severe: piping, wetness.	Cutbanks cave	Wetness, fast intake.	Wetness	Wetness.
Be	Severe: seepage.	Severe: piping, wetness.	Cutbanks cave	Wetness, slow intake.	Wetness	Wetness.
Bg, Bh	Severe: seepage.	Severe: piping, wetness.	Flooding	Flooding, wetness.	Wetness	Wetness.
Br	Moderate: seepage.	Severe: thin layer, wetness.	Favorable	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Bt	Moderate: seepage.	Severe: thin layer, wetness.	Favorable	Wetness	Erodes easily, wetness.	Erodes easily.
BY:*						
Hebert	Moderate: seepage.	Severe: thin layer, wetness.	Flooding	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Perry	Slight	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, rooting depth, percs slowly.
Cd:*						
Idee	Moderate: seepage.	Severe: wetness.	Favorable	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Forestdale	Slight	Severe: piping, wetness.	Percs slowly	Wetness, percs slowly, erodes easily.	Wetness, percs slowly, erodes easily.	Wetness, erodes easily, percs slowly.
Ce:*						
Idee	Moderate: seepage.	Severe: wetness.	Favorable	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Goodwill	Moderate: seepage.	Moderate: thin layer, piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
La	Slight	Severe: wetness, excess sodium.	Percs slowly, excess sodium.	Wetness, droughty, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, excess sodium, erodes easily.
Lb	Moderate: seepage.	Moderate: thin layer, piping, wetness.	Percs slowly	Percs slowly, rooting depth, wetness.	Erodes easily, rooting depth, wetness.	Erodes easily, rooting depth.
Le	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Percs slowly, slope.	Percs slowly, rooting depth, slope, wetness.	Erodes easily, rooting depth, wetness.	Erodes easily, rooting depth.
Lo	Slight	Severe: hard to pack, wetness.	Percs slowly	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Lt	Slight	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.

TABLE 15.--WATER MANAGEMENT--Continued

ap symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
---------- Rouge	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
---------- Rouge	Moderate: seepage.	Severe: piping.	Deep to water	Favorable------	Favorable------	Favorable.
Rouge--------	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
lion----------	Moderate: seepage.	Moderate: thin layer, piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Pe---------- ry	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, rooting depth, percs slowly.
---------- ry	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, rooting depth, percs slowly.
---------- tland	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
---------- tland	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
---------- tland	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Rb---------- la	Moderate: seepage.	Severe: thin layer.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
la----------	Moderate: seepage.	Severe: thin layer.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
ert----------	Moderate: seepage.	Severe: thin layer, wetness.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Sr---------- rlington	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
rlington------	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
ert----------	Moderate: seepage.	Severe: thin layer, wetness.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
---------- lou	Moderate: seepage.	Severe: wetness.	Favorable------	Wetness, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily.
lfs.						
sy----------	Moderate: seepage, slope.	Severe: piping.	Percs slowly, slope.	Wetness, percs slowly, rooting depth.	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth, percs slowly.
---------- ghtsville	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Yo---------- Yorktown	Slight----------	Severe: hard to pack, ponding.	Ponding, percs slowly, flooding.	Ponding, slow intake, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.

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

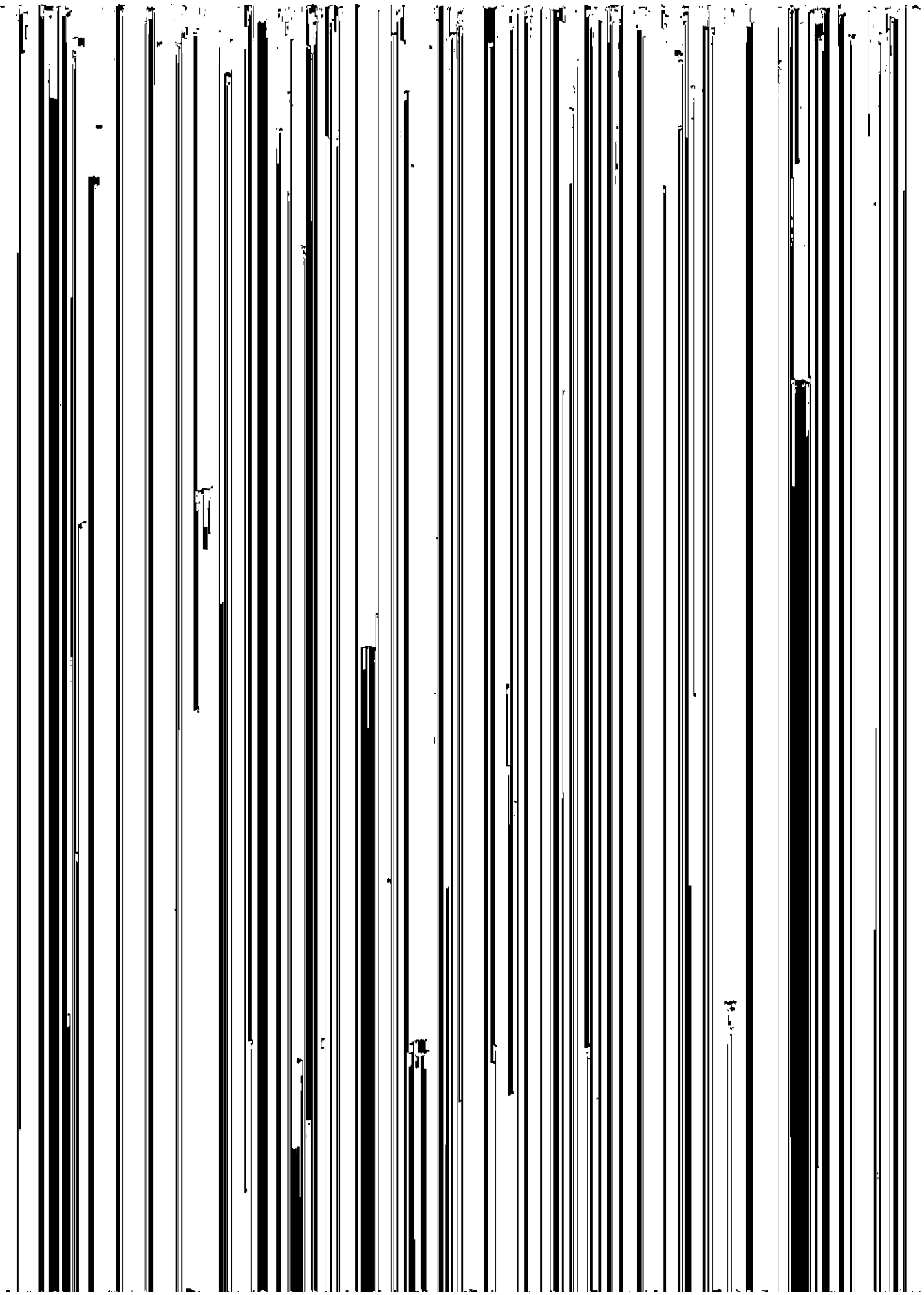
TABLE 16.--ENGINEERING INDEX PROPERTIES

ns less than; > means more than. Absence of an entry indicates that data were not estimated. ave Unified classifications and USDA textures that are supplementary to those shown. In dominant classifications and textures are shown, and the others are inferred]

Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
		Unified	AASHTO		4	10	40	200		
In				Pct					Pct	
0-36	Muck	PT	A-8	0	---	---	---	---	---	---
36-65	Clay, very fine sandy loam, silty clay.	CH, CL, ML, MH	A-7-6, A-6, A-4	0	100	100	85-95	75-95	30-75	6-45
0-4	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	<27	NP-12
4-35	Silt loam, silty clay loam.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	90-100	20-35	3-15
35-56	Silt loam, silty clay loam.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	85-95	25-40	3-25
56-65	Silt loam, silty clay loam.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	85-95	25-40	3-25
0-10	Silt loam	CL, CL-ML, ML	A-4	0	100	100	95-100	85-100	<27	NP-10
10-32	Silt loam, silty clay loam.	CL	A-6, A-7-6	0	100	100	95-100	85-100	30-43	12-22
32-70	Silt loam, loam, sandy clay loam.	CL	A-6	0	100	100	90-100	60-100	30-40	11-20
0-8	Silt loam	CL, CL-ML, ML	A-4	0	100	100	95-100	85-100	<27	NP-10
8-27	Silt loam, silty clay loam.	CL	A-6, A-7-6	0	100	100	95-100	85-100	30-43	12-22
27-90	Silt loam, loam, sandy clay loam.	CL	A-6	0	100	100	90-100	60-100	30-40	11-20
0-7	Silt loam	ML, SM, CL-ML, SM-SC	A-4	0	100	100	85-100	45-75	<25	NP-4
7-48	Silty clay loam, clay loam, silt loam.	CL	A-6, A-4	0	100	100	90-100	70-90	28-40	8-18
48-87	Sandy clay loam, fine sandy loam, loamy fine sand.	SC, SM, CL, ML	A-6, A-4	0	100	100	75-95	35-60	<38	NP-16
0-6	Silty clay loam	CL, CH	A-6, A-7	0	100	100	95-100	90-100	30-58	12-30
6-27	Silty clay, clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	90-100	40-65	20-40
27-60	Silty clay loam, silt loam, clay loam.	CL, CL-ML	A-6, A-7, A-4	0	100	100	95-100	75-100	20-50	5-30
0-48	Silt loam	CL-ML, ML, CL	A-4	0	100	100	90-100	65-90	<30	NP-10
48-54	Silty clay loam, silt loam, loam.	CL	A-6	0	100	100	90-100	70-95	31-40	11-19
54-76	Silt loam, silty clay loam, loam.	CL	A-6, A-4	0	100	100	90-100	65-95	28-40	8-19
0-7	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	100	90-100	<28	NP-11
7-19	Silt loam, silty clay loam, clay loam.	CL	A-6	0	100	100	100	90-100	28-40	11-17
19-60	Stratified silty clay loam to very fine sandy loam.	CL, CL-ML	A-6, A-4	0	100	100	100	90-100	23-34	4-12
0-14	Silty clay loam	CL	A-6	0	100	100	100	90-100	33-40	15-20
14-60	Silt loam, silty clay loam, clay loam.	CL	A-6	0	100	100	100	90-100	28-40	11-17

--Continued

Percentage passing sieve number--				Liquid limit	Plasticity index
4	10	40	200		
				Pct	
100	100	90-100	75-95	<40	3-20
100	100	90-100	75-95	<40	5-22
100	100	95-100	80-95	18-46	11-22
100	100	90-100	75-95	<40	3-20
100	100	90-100	75-95	<40	5-22
100	100	95-100	80-95	18-46	11-22
100	100	90-100	75-95	<40	3-20
100	100	90-100	75-95	<40	5-22
100	100	95-100	80-95	18-46	11-22
100	100	80-100	60-90	17-30	NP-10
100	100	90-100	70-90	22-48	8-30
100	100	70-90	35-75	22-48	8-30
100	100	90-100	75-95	<40	3-20
100	100	90-100	75-95	<40	5-22
100	100	95-100	80-95	18-46	11-22
100	100	80-100	60-90	17-30	NP-10
100	100	90-100	70-90	22-48	8-30
100	100	70-90	35-75	22-48	8-30
100	100	95-100	65-90	<27	NP-7
100	100	94-100	75-95	22-40	6-18
100	100	95-100	51-95	<40	NP-18
100	100	95-100	65-90	<27	NP-7
100	100	94-100	75-95	22-40	6-18
100	100	95-100	51-95	<40	NP-18



d t	Plas-ticity index
8	3-15
9	5-15
	NP-10
	NP-10
	NP
5	11-50
	NP-10
	NP
	NP-10
	NP-10
	NP
'5	11-50
	NP-10
	NP-7
15	11-22
10	3-18
10	11-18
15	11-22
	NP-7
15	11-22
10	3-18
75	22-45
30	33-50
30	22-50
40	4-22
40	8-22
40	4-22

NDEX PROPERTIES--Continued

tion	Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
ASHTO		4	10	40	200		
	Pct					Pct	
-6, A-7	0	100	100	95-100	90-100	30-58	12-30
-7	0	100	100	95-100	90-100	40-65	20-40
-6, A-7, -4	0	100	100	95-100	75-100	20-50	5-30
-4, A-6	0	100	100	90-100	80-95	17-40	4-22
-4, A-6	0	100	100	90-100	80-95	28-40	8-22
-4, A-6	0	100	100	85-100	60-90	17-40	4-22
-4, A-6	0	100	100	90-100	60-90	16-35	3-15
-6, -7-6	0	100	100	95-100	85-95	25-45	11-22
-4, A-6	0	100	100	85-95	55-85	16-35	3-14
-4, A-6	0	100	100	95-100	90-100	<30	NP-12
-4, A-6, -7	0	100	100	95-100	90-100	25-45	8-25
-4, A-6, -7	0	100	100	90-100	45-100	20-65	1-35
-4	0	100	100	85-100	65-90	<30	NP-7
-6	0	100	100	85-100	70-90	30-40	12-18
-6	0	100	100	85-100	60-90	30-40	12-18
-4, A-6	0	100	100	75-95	45-80	20-35	3-16
-4	0	100	100	85-100	65-90	<30	NP-7
-6	0	100	100	85-100	70-90	30-40	12-18
-6	0	100	100	85-100	60-90	30-40	12-18
-6, -7-6	0	100	100	90-100	85-95	38-70	15-41
-6, -7-6	0	100	100	90-100	85-95	38-70	15-41
-6, -7-6	0	100	100	90-100	85-95	38-70	15-41
-6, -7-6	0	100	100	90-100	85-95	38-70	15-41
-4	0	100	100	100	80-100	<30	NP-10
-6, -7-6	0	70-90	70-90	70-90	50-85	31-45	11-22
-4, A-6	0	70-90	70-90	70-90	50-85	<37	NP-15
-6, -7-6	0	100	100	100	90-100	32-45	11-22
-6, -7-6	0	70-90	70-90	70-90	50-85	31-45	11-22

X PROPERTIES--Continued

on HTO	Fragments > 3 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	Pct					Pct	
	0	100	100	100	80-100	<30	NP-10
-6	0	70-90	70-90	70-90	50-85	31-45	11-22
A-6	0	100	100	100	90-100	<28	NP-11
	0	100	100	100	90-100	28-40	11-17
A-4	0	100	100	100	90-100	23-34	4-12
6	0	100	100	100	95-100	45-75	22-45
6	0	100	100	100	95-100	60-80	33-50
6	0	90-100	85-100	75-100	70-100	45-80	22-50
6	0	100	100	100	95-100	45-75	22-45
6	0	100	100	100	95-100	60-80	33-50
6	0	90-100	85-100	75-100	70-100	45-80	22-50
6	0	100	100	100	95-100	45-75	22-45
6	0	100	100	100	95-100	60-80	33-50
6	0	90-100	85-100	75-100	70-100	45-80	22-50
A-6	0	100	100	95-100	95-100	20-35	2-15
	0	100	100	95-100	95-100	60-90	40-60
	0	100	98-100	95-100	95-100	60-90	40-60
A-6	0	100	98-100	95-100	85-100	35-90	20-55
	0	100	100	95-100	95-100	55-80	35-55
	0	100	100	95-100	95-100	60-90	40-60
	0	100	98-100	95-100	95-100	60-90	40-60
	0	100	100	95-100	95-100	55-80	35-55
	0	100	100	95-100	95-100	60-90	40-60
A-6	0	100	98-100	95-100	85-100	35-90	20-55
	0	100	100	100	90-100	<31	NP-10
A-4	0	100	100	100	90-100	28-40	8-17
A-6, -6	0	100	100	100	75-100	23-45	4-21
	0	100	100	100	90-100	<31	NP-10
A-4	0	100	100	100	90-100	28-40	8-17
	0	100	100	100	90-100	<31	NP-10
A-4	0	100	100	100	90-100	28-40	8-17

NGINEERING INDEX PROPERTIES--Continued

Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
Unified	AASHTO		4	10	40	200		
		Pct					Pct	
ML, CL-ML	A-4	0	100	100	100	65-100	<27	NP-7
CL	A-6, A-7-6	0	100	100	100	85-100	31-45	11-22
ML, CL-ML, CL	A-4, A-6	0	100	100	90-100	60-100	22-40	3-18
ML	A-4	0	100	100	90-100	60-95	<23	NP-3
CL-ML, ML	A-4	0	100	100	90-100	80-95	<28	NP-7
ML, CL-ML	A-4	0	100	100	90-100	80-95	<28	NP-7
ML	A-4	0	100	100	90-100	60-95	<23	NP-3
CL-ML, ML	A-4	0	100	100	90-100	80-95	<28	NP-7
ML	A-4	0	100	100	90-100	60-95	<23	NP-3
CL-ML, ML	A-4	0	100	100	90-100	80-95	<28	NP-7
ML, CL-ML	A-4	0	100	100	90-100	80-95	<28	NP-7
ML, CL-ML	A-4	0	100	100	100	65-100	<27	NP-7
CL	A-6, A-7-6	0	100	100	100	85-100	31-45	11-22
ML, CL-ML, CL	A-4, A-6	0	100	100	90-100	60-100	22-40	3-18
CL, CL-ML	A-4, A-6	0	100	100	95-100	85-100	24-30	5-15
CL	A-6, A-7-6	0	100	100	95-100	90-100	30-42	14-23
CL	A-6, A-7-6	0	100	100	95-100	85-100	36-46	14-22
ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	<27	NP-12
CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	90-100	20-35	3-15
CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	85-95	25-40	3-25
ML, CL, CL-ML	A-4	0	100	95-100	90-100	75-100	<31	NP-10
CH, CL	A-7	0	100	100	95-100	90-100	41-65	22-40
CL, CH	A-7, A-6	0	100	95-100	95-100	90-100	35-55	16-30
MH, CH, OH	A-7	0	100	100	100	95-100	55-75	24-45
CH	A-7	0	100	100	100	95-100	60-80	32-50
CH	A-7	0	100	100	95-100	90-100	60-80	32-50

composition and behavior characteristics of the map unit.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm³	In/hr	In/in	pH				Pct
Ad----------	0-36	---	0.05-0.25	>2.0	0.20-0.50	3.6-5.5	Low-------	----	---	30-85
Allemands	36-65	45-95	0.25-1.00	<0.06	0.12-0.18	3.6-6.5	High-------	0.37		
Bs----------	0-4	5-11	1.00-1.60	0.6-2.0	0.22-0.27	4.5-5.5	Low-------	0.49	3	.5-5
Bussy	4-35	15-30	1.30-1.60	0.6-2.0	0.17-0.27	4.5-5.5	Low-------	0.43		
	35-56	15-30	1.45-1.75	0.06-0.2	0.06-0.13	4.5-5.5	Moderate	0.37		
	56-65	15-30	1.30-1.60	0.2-0.6	0.17-0.22	4.5-6.0	Moderate	0.37		
Db----------	0-10	8-18	1.35-1.65	0.6-2.0	0.18-0.22	4.5-6.0	Low-------	0.49	3	.5-6
Debute	10-32	18-35	1.35-1.65	0.6-2.0	0.18-0.25	4.5-6.0	Moderate	0.43		
	32-70	15-25	1.45-1.85	0.06-0.2	0.06-0.13	4.5-6.0	Moderate	0.32		
De----------	0-8	8-18	1.35-1.65	0.6-2.0	0.18-0.22	4.5-6.0	Low-------	0.49	3	.5-6
Debute	8-27	18-35	1.35-1.65	0.6-2.0	0.18-0.25	4.5-6.0	Moderate	0.43		
	27-90	15-25	1.45-1.85	0.06-0.2	0.06-0.13	4.5-6.0	Moderate	0.32		
Dx----------	0-7	10-27	1.30-1.70	0.6-2.0	0.15-0.24	5.1-6.5	Low-------	0.43	5	.5-4
Dexter	7-48	10-35	1.40-1.80	0.6-2.0	0.15-0.24	4.5-6.0	Low-------	0.32		
	48-87	10-30	1.30-1.70	0.6-6.0	0.08-0.18	4.5-6.0	Low-------	0.24		
Fo----------	0-6	27-38	1.35-1.65	0.2-0.6	0.20-0.22	4.5-6.0	Moderate	0.37	5	.5-4
Forestdale	6-27	35-60	1.20-1.60	<0.06	0.14-0.18	4.5-6.0	High-------	0.28		
	27-60	10-35	1.35-1.65	0.2-0.6	0.17-0.22	5.1-7.8	Moderate	0.37		
Fr----------	0-48	8-18	1.35-1.65	0.6-2.0	0.15-0.22	4.5-5.5	Low-------	0.49	5	.5-4
Frizzell	48-54	14-30	1.35-1.65	0.06-0.2	0.15-0.20	4.5-5.5	Low-------	0.43		
	54-76	14-30	1.35-1.65	0.06-0.6	0.15-0.20	4.5-5.5	Low-------	0.43		
Ga----------	0-7	14-27	1.35-1.65	0.6-2.0	0.21-0.23	5.6-7.3	Low-------	0.43	5	.5-2
Gallion	7-19	14-35	1.35-1.75	0.6-2.0	0.20-0.22	5.6-7.8	Moderate	0.37		
	19-60	14-35	1.35-1.75	0.6-2.0	0.20-0.23	6.1-8.4	Low-------	0.37		
Gb----------	0-14	27-35	1.35-1.65	0.6-2.0	0.20-0.22	5.6-7.3	Moderate	0.37	5	.5-2
Gallion	14-60	14-35	1.35-1.75	0.6-2.0	0.20-0.22	5.6-7.8	Moderate	0.32		
Gm----------	0-5	10-20	1.30-1.65	0.6-2.0	0.18-0.24	3.6-7.3	Low-------	0.43	5	.5-2
Groom	5-12	18-25	1.35-1.80	0.2-0.6	0.18-0.24	3.6-5.5	Low-------	0.37		
	12-78	20-35	1.35-1.80	0.2-0.6	0.15-0.24	3.6-5.5	Moderate	0.37		
Go----------	0-4	10-20	1.30-1.65	0.6-2.0	0.18-0.24	3.6-5.5	Low-------	0.43	5	.5-2
Groom	4-14	18-25	1.35-1.80	0.2-0.6	0.18-0.24	3.6-5.5	Low-------	0.37		
	14-70	20-35	1.35-1.80	0.2-0.6	0.15-0.24	3.6-5.5	Moderate	0.37		
Gp:*										
Groom----------	0-5	10-20	1.30-1.65	0.6-2.0	0.18-0.24	3.6-5.5	Low-------	0.43	5	.5-2
	4-14	18-25	1.35-1.80	0.2-0.6	0.18-0.24	3.6-5.5	Low-------	0.37		
	14-75	20-35	1.35-1.80	0.2-0.6	0.15-0.24	3.6-5.5	Moderate	0.37		
Mollicy---------	0-5	10-20	1.35-1.70	0.6-2.0	0.18-0.24	3.6-5.5	Low-------	0.43	3	.5-2
	5-34	18-35	1.35-1.80	0.2-0.6	0.15-0.22	3.6-5.5	Moderate	0.32		
	34-90	11-35	1.35-1.85	0.2-0.6	0.12-0.20	3.6-5.5	Moderate	0.28		
Gs:*										
Groom----------	0-4	10-20	1.30-1.65	0.6-2.0	0.18-0.24	3.6-5.5	Low-------	0.43	5	.5-2
	4-9	18-25	1.35-1.80	0.2-0.6	0.18-0.24	3.6-5.5	Low-------	0.37		
	9-65	20-35	1.35-1.80	0.2-0.6	0.15-0.24	3.6-5.5	Moderate	0.37		
Mollicy---------	0-3	10-20	1.35-1.70	0.6-2.0	0.18-0.24	3.6-5.5	Low-------	0.43	3	.5-2
	3-34	18-35	1.35-1.80	0.2-0.6	0.15-0.22	3.6-5.5	Moderate	0.32		
	34-70	12-35	1.35-1.85	0.2-0.6	0.12-0.20	3.6-5.5	Moderate	0.28		
Gu----------	0-23	7-25	1.35-1.65	0.6-2.0	0.20-0.23	4.5-6.0	Low-------	0.43	5	<2
Guyton	23-42	20-35	1.35-1.70	0.06-0.2	0.15-0.22	3.6-6.0	Low-------	0.37		
	42-60	20-35	1.35-1.70	0.06-2.0	0.15-0.22	4.5-7.3	Low-------	0.37		

AL PROPERTIES OF THE SOILS--Continued

ilable ater acity	Reaction	Shrink-swell potential	Erosion factors		Organic matter
			K	T	
n/in	pH				Pct
0-0.23	3.6-6.0	Low	0.43	5	<2
5-0.22	3.6-6.0	Low	0.37		
5-0.22	3.6-8.4	Low	0.37		
8-0.22	4.5-5.5	Low	0.43	5	1-3
6-0.20	4.5-5.5	Low	0.43		
1-0.24	3.6-5.5	Low	0.24	5	.1-1
1-0.20	3.6-5.5	Low	0.24		
2-0.11	3.6-5.5	Low	0.17		
7-0.22	3.6-5.5	High	0.28	5	.5-4
1-0.20	3.6-5.5	Low	0.24		
2-0.11	3.6-5.5	Low	0.17		
1-0.24	3.6-5.5	Low	0.24	5	.5-1
1-0.20	3.6-5.5	Low	0.24		
2-0.11	3.6-5.5	Low	0.17		
7-0.22	3.6-5.5	High	0.28	5	.5-4
1-0.20	3.6-5.5	Low	0.24		
1-0.23	4.5-7.3	Low	0.43	5	.5-4
8-0.22	4.5-6.5	Moderate	0.32		
8-0.22	5.1-7.8	Low	0.37		
0-0.22	5.1-7.3	Moderate	0.32	5	.5-4
8-0.22	4.5-6.5	Moderate	0.32		
1-0.23	4.5-7.3	Low	0.43	5	.5-4
8-0.22	4.5-6.5	Moderate	0.32		
8-0.22	5.1-7.8	Low	0.37		
7-0.20	4.5-6.0	High	0.32	5	.5-4
7-0.20	5.1-7.3	Very high	0.28		
7-0.20	6.1-8.4	Very high	0.28		
8-0.24	3.6-6.5	Low	0.37	5	.5-4
5-0.24	4.5-6.5	Moderate	0.37		
8-0.24	4.5-6.5	Low	0.32		
0-0.22	4.5-6.0	Moderate	0.37	5	.5-4
4-0.18	4.5-6.0	High	0.28		
7-0.22	5.1-7.8	Moderate	0.37		
8-0.24	3.6-6.5	Low	0.37	5	.5-4
5-0.24	3.6-6.5	Moderate	0.37		
8-0.24	4.5-6.5	Low	0.32		
8-0.24	4.5-6.0	Low	0.37	5	.5-3
8-0.24	4.5-6.0	Moderate	0.37		
8-0.24	4.5-6.5	Low	0.37		
3-0.24	5.1-6.5	Low	0.49	1	1-4
9-0.15	7.4-9.0	Moderate	0.49		
2-0.07	7.4-9.0	Moderate	0.49		
8-0.22	5.1-6.5	Low	0.49	3	.5-4
8-0.22	4.5-6.0	Low	0.37		
0-0.14	4.5-6.0	Low	0.37		
4-0.18	4.5-6.0	Low	0.43		
8-0.22	5.1-6.5	Low	0.49	3	.5-4
8-0.22	4.5-6.0	Low	0.37		
0-0.14	4.5-5.5	Low	0.37		

d

ion ors T	Organic matter
	Pct
3	.5-5
3	.5-5
5	1-4
5	1-4
5	1-4
5	.5-2
5	.5-4
5	.5-4
5	.5-4
5	1-4
5	1-4
5	1-4
5	.5-4
5	.5-4
5	.5-4
5	.5-4
5	.5-4

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm^3	In/hr	In/in	pH				Pct
St:*										
Sterlington	0-15	10-18	1.30-1.65	0.6-2.0	0.18-0.22	4.5-6.0	Low	0.43	5	.5-4
	15-48	10-18	1.30-1.70	0.6-2.0	0.18-0.22	4.5-6.5	Low	0.37		
	48-60	10-22	1.30-1.70	0.6-2.0	0.18-0.22	4.5-7.8	Low	0.37		
Hebert	0-15	10-27	1.30-1.65	0.6-2.0	0.21-0.23	5.1-7.3	Low	0.43	5	.5-4
	15-32	14-35	1.30-1.80	0.2-0.6	0.18-0.22	4.5-6.5	Moderate	0.32		
	32-60	10-35	1.30-1.80	0.6-2.0	0.18-0.22	5.1-7.8	Low	0.37		
To	0-8	10-20	1.10-1.65	0.6-2.0	0.24-0.27	4.5-6.0	Low	0.43	5	.5-4
Tillou	8-40	20-35	1.30-1.65	0.6-2.0	0.14-0.23	4.5-6.0	Moderate	0.43		
	40-76	20-35	1.30-1.65	0.06-0.2	0.14-0.20	5.1-7.8	Moderate	0.37		
UB:*										
Udalfs.										
Bussy	0-4	5-11	1.00-1.60	0.6-2.0	0.22-0.27	4.5-5.5	Low	0.49	3	.5-5
	4-24	15-30	1.30-1.60	0.6-2.0	0.17-0.27	4.5-5.5	Low	0.43		
	24-60	15-30	1.45-1.75	0.06-0.2	0.06-0.13	4.5-6.0	Moderate	0.37		
Wr	0-11	10-25	1.25-1.50	0.2-0.6	0.16-0.24	3.6-5.5	Low	0.49	5	.5-4
Wrightsville	11-43	35-55	1.20-1.45	<0.06	0.14-0.22	3.6-5.5	High	0.37		
	43-73	20-45	1.20-1.50	<0.06	0.14-0.22	5.1-8.4	High	0.43		
Yo	0-7	40-65	1.15-1.45	<0.06	0.12-0.18	4.5-6.0	High	0.32	5	---
Yorktown	7-48	60-80	1.15-1.45	<0.06	0.12-0.18	4.5-6.0	Very high	0.32		
	48-60	60-80	1.15-1.45	<0.06	0.12-0.18	4.5-6.5	Very high	0.32		

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

TABLE 18.--SOIL AND WATER FEATURES

ee text for definition of terms. The symbol > means more than. Absence of an entry indicates that the feature is not concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
llemands	D	Rare	---	---	+1-4.0	Apparent	Jan-Dec	High	Moderate.
ussy	C	None	---	---	2.0-3.0	Perched	Dec-Mar	Moderate	Moderate.
, De-- ebute	C	None	---	---	1.5-3.0	Perched	Dec-Mar	Moderate	Moderate.
exter	B	None	---	---	>6.0	---	---	Moderate	Moderate.
orestdale	D	Rare	---	---	0.5-2.0	Apparent	Jan-Apr	High	Moderate.
rizzell	C	None	---	---	1.5-4.0	Apparent	Dec-Apr	High	High.
, Gb-- allion	B	None	---	---	>6.0	---	---	Moderate	Low.
room	C	Rare	---	---	0-1.0	Apparent	Nov-Jul	High	Moderate.
room	C	Occasional	Long	Nov-Jul	0-1.0	Apparent	Nov-Jul	High	Moderate.
:* room--	C	Rare	---	---	0-1.0	Apparent	Nov-Jul	High	Moderate.
ollicy--	C	Rare	---	---	1.5-3.0	Apparent	Nov-Jun	High	High.
:* room--	C	Occasional	Long	Nov-Jul	0-1.0	Apparent	Nov-Jul	High	Moderate.
ollicy--	C	Occasional	Brief to long.	Nov-Jun	1.5-3.0	Apparent	Nov-Jun	High	High.
ayton	D	None	---	---	0-1.5	Perched	Dec-May	High	Moderate.
:* ayton--	D	Frequent	Very brief to long.	Jan-Dec	0-1.5	Perched	Dec-May	High	Moderate.
ascilla--	B	Frequent	Very brief to long.	Jan-Apr	>6.0	---	---	Low	Moderate.
, He-- aggerty	B	Rare	---	---	0-1.5	Apparent	Nov-Jun	High	High.
, Hh-- aggerty	B	Frequent	Very long	Nov-Jul	0-1.5	Apparent	Nov-Jun	High	High.
, Ht-- ebert	C	None	---	---	1.5-3.0	Apparent	Dec-Apr	High	Moderate.
:* ebert--	C	Frequent	Brief to very long.	Dec-Jun	1.5-3.0	Apparent	Dec-Apr	High	Moderate.
rry--	D	Frequent	Brief to very long.	Dec-Jun	0-2.0	Apparent	Dec-Apr	High	Moderate.

See footnote at end of table.

ued

ple	Risk of corrosion	
Months	Uncoated steel	Concrete
Jan-Apr	High	Moderate.
Jan-Apr	High	Moderate.
Jan-Apr	High	Moderate.
---	Moderate	Moderate.
Dec-Apr	High	Moderate.
Dec-Apr	High	Moderate.
Nov-Jun	High	High.
Nov-Jun	High	High.
Dec-Apr	High	Low.
Dec-Apr	High	Low.
---	Moderate	Low.
Dec-Apr	High	Moderate.
Dec-Apr	High	Moderate.
Dec-May	High	Moderate.
Dec-May	High	Moderate.
Dec-Apr	Moderate	High.
Dec-Apr	Moderate	High.
Dec-Apr	High	Moderate.
---	Low	Moderate.
---	Low	Moderate.
Dec-Apr	High	Moderate.
Dec-Apr	High	Moderate.
Dec-Mar	Moderate	Moderate.

TABLE 18.--SOIL AND WATER FEATURES--Continued

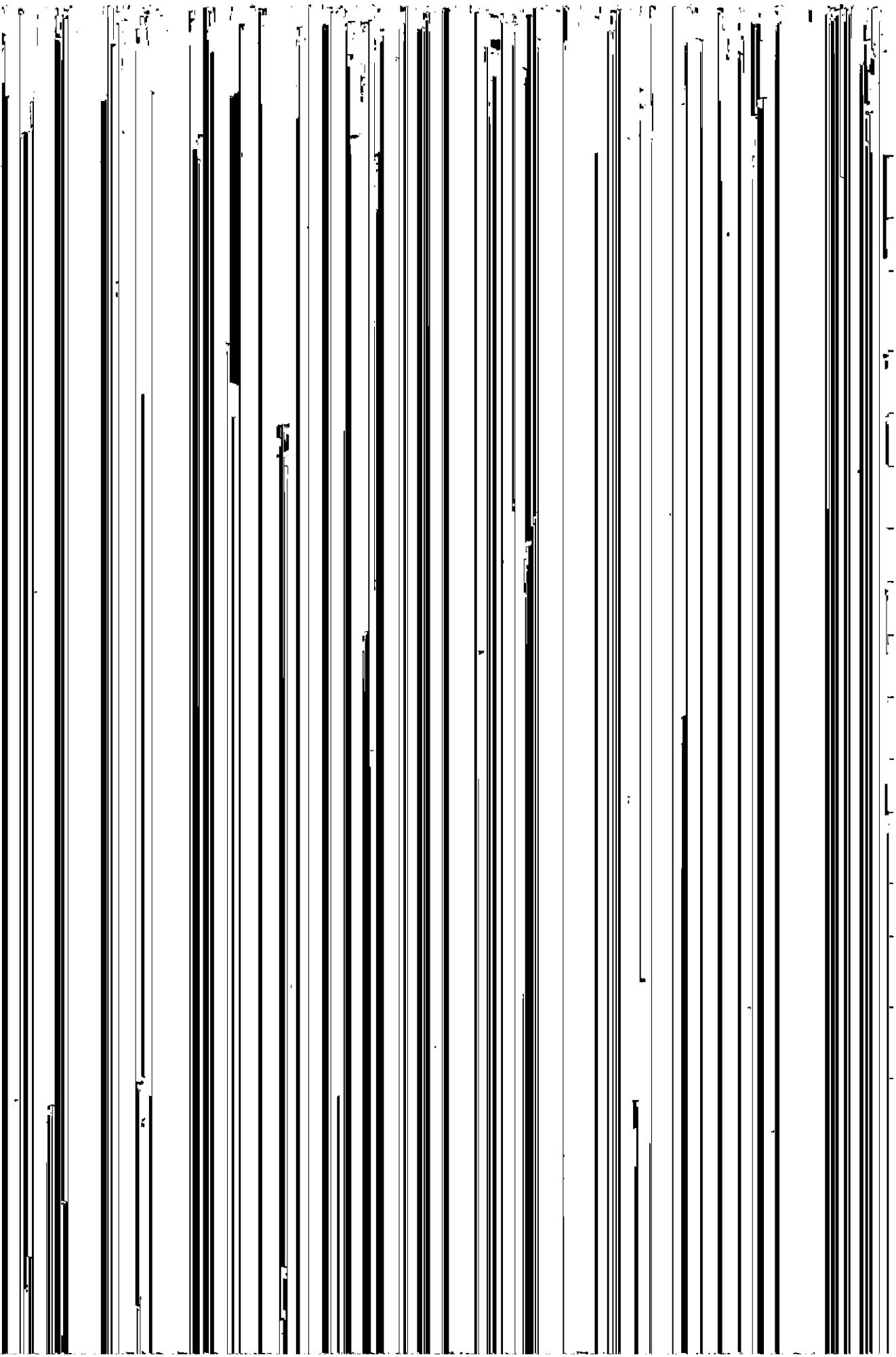
Flooding			High water table			Risk of corrosion	
Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
			Ft				
are--------	---	---	0.5-1.5	Perched	Dec-Apr	High-----	High.
equent----	Very long	Oct-Aug	+5-0.5	Apparent	Oct-Aug	High-----	Moderate.

map unit for composition and behavior characteristics of the map unit.

TABLE 19.--FERTILITY TEST DATA ON SELECTED SOILS

[Analyses by the Soil Fertility Laboratory, Louisiana Agricultural Experiment Station. The symbol TR means trace. The symbol < means less than]

Soil and sample number	Depth from surface	Horizon	pH 1:1 H_2O	Organic matter content	Extractable P	Extractable cations						Extractable acidity	Cation-exchange capacity (sum)	Base saturation (sum)	Al* saturation	Na** saturation
						Ca	Mg	K	Na	Al	H					
	In			Pct	Ppm	Meq/100g								Pct	Pct	Pct
Allemands muck: (S80LA-67-13)	0-6	Oa1	5.4	63.3	332	22.0	5.7	0.4	0.3	0.2	0.4	46.6	75.0	38	<1.0	<1.0
	6-18	Oa2	4.3	84.6	32	14.4	4.7	0.1	0.4	0.9	1.4	56.0	75.6	26	4.1	<1.0
	18-30	Oa3	4.2	77.4	22	11.2	4.7	0.1	0.4	1.3	1.2	47.2	63.6	26	6.9	<1.0
	30-36	Oa4	4.4	78.9	28	12.4	5.1	0.2	0.3	1.0	1.3	45.5	63.5	28	4.7	<1.0
	36-65	IICg	4.4	14.5	66	13.4	10.0	1.0	0.3	5.4	1.7	25.0	49.7	50	17.0	<1.0
Cascilla silt loam: (S80LA-67-5)	0-7	Ap	4.7	2.60	14	0.7	0.3	0.2	2.4	1.8	0.4	10.1	13.7	26	31.0	17.5
	7-13	B1	4.7	0.53	15	0.4	0.3	0.1	0.1	2.6	0.4	7.6	8.5	11	66.7	1.2
	13-24	B21	4.8	0.10	27	0.4	0.9	0.2	0.1	3.6	0.6	8.6	10.2	16	62.1	1.2
	24-40	B22	4.7	0.19	22	0.4	0.8	0.1	0.1	3.3	0.7	6.1	7.5	19	61.1	1.3
	40-60	B3	4.7	0.29	22	0.4	0.7	0.1	0.1	3.6	0.7	8.1	9.4	14	64.3	1.1
Dexter silt loam: (S80LA-67-6)	0-2	Ap1	5.5	1.97	76	4.1	1.0	0.4	0.1	0.2	0.1	4.1	9.7	58	3.4	1.0
	2-7	Ap2	5.6	1.44	76	4.3	1.0	0.3	0.1	0.2	0.1	5.6	11.3	50	3.3	0.9
	7-14	B21t	5.7	0.43	115	6.7	1.8	0.2	0.1	0.2	0.2	5.6	14.4	61	2.2	0.7
	14-28	B22t	5.2	0.29	69	5.3	1.9	0.2	0.1	1.3	0.2	6.1	13.6	55	14.4	0.7
	28-48	B23t	5.5	0.10	48	3.7	1.2	0.1	0.1	0.4	0.2	3.0	8.1	63	7.0	1.2
	48-59	IIB3	5.8	0.15	57	2.3	0.6	0.1	0.1	0.2	0.0	2.0	5.1	61	6.1	2.0
	59-87	IIC	5.8	0.15	57	2.4	0.7	0.1	0.1	0.2	0.0	1.0	4.3	77	5.7	2.3
Forestdale silty clay loam: (S80LA-67-7)	0-6	Ap	5.9	1.73	58	13.5	5.5	0.4	0.3	0.0	0.2	8.1	27.8	71	0.0	1.1
	6-27	B2tg	5.1	0.82	28	13.4	7.8	0.4	1.1	1.6	0.2	10.1	32.8	69	6.5	3.4
	27-35	B31g	5.9	0.24	9	9.4	8.0	0.3	2.2	0.6	0.3	8.6	28.5	70	2.9	7.7
	35-60	B32g	6.4	0.10	21	8.5	9.9	0.3	3.4	0.0	0.0	4.1	26.2	84	0.0	13.0
Frizzell silt loam: (S80LA-67-15)	0-4	A1	5.2	2.31	8	2.1	0.6	0.1	0.1	0.2	0.4	5.6	8.5	34	5.7	1.2
	4-25	B&A21	4.9	0.43	5	0.9	0.6	0.1	0.1	2.2	0.2	4.1	5.8	29	53.6	1.7
	25-48	B&A22	5.2	0.29	5	0.5	0.6	0.1	0.2	3.4	0.3	6.6	8.0	18	66.7	2.5
	48-54	B21t	5.3	0.29	5	1.4	1.7	0.1	0.8	4.9	0.1	9.1	13.1	30	54.4	6.9
	54-76	B22t	5.3	0.19	5	1.7	1.6	0.1	0.6	2.5	0.4	4.1	8.1	49	36.2	7.4
Gallion silt loam: (S80LA-67-16)	0-7	Ap	5.8	1.20	13	5.4	2.0	0.1	0.1	0.0	0.2	3.6	11.2	68	0.0	0.9
	7-19	B21t	6.3	0.34	5	9.9	6.0	0.2	0.1	0.0	0.0	4.1	20.3	80	0.0	0.5
	19-27	B22t	8.1	0.29	40	24.4	4.7	0.2	0.1	0.0	0.0	0.0	29.4	100	0.0	0.3
	27-38	B3	8.2	0.24	131	8.7	2.9	0.1	0.1	0.0	0.0	0.0	11.8	100	0.0	0.8
	38-60	C	8.3	0.19	75	24.0	3.2	0.1	0.1	0.0	0.0	0.0	27.4	100	0.0	0.4
Guyton silt loam: (S80LA-67-9)	0-6	A1	4.9	1.30	5	1.0	0.4	0.1	0.1	1.4	0.4	4.2	5.8	28	41.2	1.7
	6-13	A21g	4.9	1.39	5	0.6	0.3	0.1	0.1	1.8	0.4	3.2	4.3	26	54.5	2.3
	13-23	A22g	5.0	0.29	5	0.4	0.3	0.1	0.1	2.3	0.6	3.1	4.0	22	60.5	2.5
	23-32	B&A	5.3	0.29	5	0.5	0.6	0.1	0.3	3.5	1.1	5.8	7.3	20	57.4	4.1
	32-42	B22tg	5.2	0.19	5	0.4	0.9	0.1	0.8	4.9	0.8	8.9	11.1	20	62.0	7.2
	42-60	B3tg	5.1	0.15	7	0.7	1.1	0.1	1.4	4.6	0.9	7.3	10.6	31	57.3	13.2



Soil and sample number	Depth from surface	Horizon	pH 1:1 H_2O	Organic matter content	Extractable P	Extractable cations						Extractable acidity	Cation-exchange capacity (sum)	Base saturation (sum	Al* saturation	Na** saturation
						Ca	Mg	K	Na	Al	H					
	In			Pct	Ppm	Meq/100g								Pct	Pct	Pct
Rilla silt loam: (S80LA-67-20)	0-6	Ap	5.2	0.43	146	6.0	2.4	0.3	0.2	0.8	0.4	6.1	15.0	59	7.9	1.3
	6-10	A2	4.8	0.24	154	5.0	1.0	0.1	0.1	2.5	0.3	7.1	13.3	47	27.8	0.8
	10-15	B21t	4.7	0.24	182	7.2	4.0	0.4	0.4	4.2	0.2	11.1	23.1	52	25.6	1.7
	15-28	B22t	5.0	0.15	112	8.6	4.7	0.3	0.7	1.4	0.4	7.1	21.4	67	8.7	3.3
	28-41	B23t	5.1	0.19	129	10.8	6.2	0.4	1.1	0.7	0.4	7.1	25.6	72	3.6	4.3
	41-58	IIB3	5.4	0.10	141	5.7	3.0	0.2	0.7	0.2	0.2	2.0	11.1	82	2.1	6.3
	58-71	IIC	7.1	0.24	226	20.6	10.8	0.8	3.4	0.0	0.0	4.1	39.7	90	0.0	8.6
Sterlington silt loam: (S80LA-67-21)	0-8	Ap	5.7	0.82	110	3.3	0.6	0.2	0.1	0.1	0.1	2.0	6.2	68	2.3	1.6
	8-22	B2t	4.8	0.24	131	4.0	2.9	0.2	0.2	4.0	0.0	7.6	14.9	50	35.4	1.3
	22-28	A'&B	4.9	0.19	140	1.8	1.8	0.1	0.1	1.9	0.0	3.0	6.8	56	33.3	1.5
	28-57	B'2t	5.0	0.00	163	2.4	3.2	0.2	0.1	2.4	0.0	5.1	11.0	54	28.9	0.9
	57-75	C	5.4	0.19	142	2.4	2.6	0.1	0.2	0.2	0.6	1.0	6.3	84	3.3	3.2
Wrightsville silt loam: (S80LA-67-22)	0-2	A1	4.5	2.69	8	1.2	0.6	0.1	0.2	2.9	0.9	10.1	12.3	17	49.2	1.6
	2-11	A2g	4.8	0.29	5	2.0	0.9	0.1	0.3	5.8	0.8	11.1	14.4	23	58.6	2.1
	11-19	Bg&Ag	4.8	0.19	5	2.8	1.5	0.1	0.7	6.4	0.5	11.1	16.6	31	53.3	4.2
	19-28	B2tg	4.5	0.29	5	5.9	3.8	0.2	2.6	7.2	0.2	15.7	28.2	44	36.2	9.2
	28-43	B3tg	4.6	0.15	5	6.8	4.6	0.2	4.8	4.1	0.0	10.1	26.5	62	20.0	18.1
	43-73	C	6.3	0.15	5	9.9	6.1	0.2	7.2	0.0	0.0	4.1	27.5	85	0.0	26.2
Yorktown clay: (S80LA-67-8)	2-0	01	5.3	5.00	63	19.3	5.8	0.9	0.4	0.1	0.4	30.8	57.2	46	0.4	0.7
	0-7	A1	5.0	4.33	135	12.0	5.0	1.1	0.3	2.1	0.7	23.6	42.0	44	9.9	0.7
	7-17	B21g	4.6	1.35	81	10.8	5.3	1.0	0.2	4.8	0.7	18.1	35.4	49	21.0	0.6
	17-30	B22g	4.7	0.77	51	10.2	6.3	1.1	0.2	8.6	1.0	24.6	42.4	42	31.4	0.5
	30-48	B23g	4.6	0.39	69	17.2	8.3	1.3	0.3	4.9	1.1	22.5	49.6	55	14.8	0.6
	48-60	B3	5.0	0.48	65	16.1	8.3	1.1	0.2	1.8	0.7	14.6	40.3	64	6.4	0.5

*Percent saturation of Al was calculated by dividing the extractable aluminum by the total amount of extractable cations.
**Percent saturation of Na was calculated by dividing the extractable sodium by the cation-exchange capacity.

TABLE 20.--PHYSICAL TEST DATA ON SELECTED SOILS

[The symbol TR means trace. Dashes indicate analysis not made]

Soil and sample number	Horizon	Depth from surface	Particle-size distribution (mm)									Water content at tension		Bulk density		
			Sand						Silt (0.05-0.002)	Clay (0.002)	Fine clay (0.0002)	1/3 Bar	15 Bar	1/3 Bar	Oven-dry	Field moisture
			Very coarse (2.0-1.0)	Coarse (1.0-0.5)	Medium (0.5-0.25)	Fine (0.25-0.10)	Very fine (0.10-0.05)	Total (2.0-0.05)								
		In	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	G/cm³	G/cm³	G/cm³
Bussy silt loam: (S78LA-67-3)*	A1	0-4	0.8	0.5	0.7	5.8	11.7	19.5	69.9	10.6	5.1	36.0	7.4	1.00	1.13	---
	B1	4-9	1.4	0.6	0.6	4.9	11.2	18.7	64.5	16.8	10.6	20.5	6.8	1.56	1.59	---
	B21t	9-15	0.5	0.4	0.5	4.8	10.1	16.3	64.5	19.2	11.0	21.3	8.0	1.50	1.55	---
	B22t	15-22	0.8	0.6	0.6	4.2	9.5	15.7	63.0	21.3	13.1	22.0	8.4	1.50	1.54	---
	B23t	22-29	1.0	0.5	0.4	3.5	9.0	14.4	62.2	23.4	14.8	21.9	9.5	1.51	1.56	---
	B23t	29-35	1.0	0.3	0.4	3.9	8.3	13.9	61.0	25.1	16.9	23.0	10.3	1.48	1.52	---
	Bx1	35-45	0.7	0.3	0.4	4.3	10.0	15.7	61.3	23.0	14.8	18.5	8.9	1.66	1.71	---
	Bx2	45-56	0.8	0.1	0.4	4.1	9.4	14.8	57.7	27.5	18.9	21.1	11.5	1.56	1.70	---
	Bx3	56-65	0.9	0.3	0.5	4.7	10.8	17.2	60.3	22.5	15.9	23.3	10.4	1.48	1.61	---
Debute silt loam: (S78LA-67-2)*	A11	0-2	0.1	0.3	5.3	20.0	6.6	32.3	58.7	9.0	5.2	---	7.8	---	---	---
	A12	2-8	0.1	0.4	2.2	13.0	4.0	19.7	67.2	13.1	6.6	20.4	5.8	1.44	1.47	---
	B21t	8-18	0.1	0.2	2.4	7.6	3.0	13.3	62.0	24.7	15.3	21.0	10.7	1.39	1.44	---
	B22t	18-27	---	0.2	1.8	10.6	3.4	16.0	56.7	27.3	17.8	22.5	12.4	1.49	1.56	---
	IIBx1	27-37	TR	0.3	5.3	17.1	6.4	29.1	52.5	18.4	11.5	18.0	8.2	1.67	1.72	---
	IIBx2	37-53	0.1	0.3	7.7	26.3	8.6	43.0	39.9	17.1	13.5	---	6.8	1.79	1.79	---
	IIBx3	53-70	TR	0.2	7.7	26.2	9.2	43.3	34.3	22.4	18.8	17.3	10.0	1.74	1.81	---
	IIB23t	70-90	TR	0.2	8.8	35.2	9.9	54.1	24.3	21.6	---	---	8.9	1.70	---	---
Goodwill silt loam: (S80LA-67-1)**	Ap	0-5	0.2	0.5	1.7	17.9	9.8	30.0	53.0	17.0	---	25.4	8.3	---	1.65	1.55
	B21t	5-9	0.4	0.4	1.0	10.3	10.8	23.0	51.5	24.5	---	25.4	10.8	---	1.76	1.63
	B22t	9-18	0.3	0.7	1.0	7.2	4.8	14.0	56.0	30.0	---	29.5	13.5	---	1.64	1.51
	B23t	18-28	1.0	2.0	1.7	9.8	5.2	19.8	54.1	26.1	---	29.7	12.4	---	1.61	1.49
	IIB24t	28-42	0.1	0.1	1.7	26.7	11.1	39.7	39.7	20.6	---	23.5	9.4	---	1.73	1.66
	IIB25t	42-56	---	0.1	2.5	37.4	15.3	55.2	30.3	14.5	---	16.9	7.2	---	1.73	1.68
	IIB3	56-72	---	---	3.1	46.9	20.1	70.1	15.8	14.1	---	16.6	7.0	---	1.75	1.69
Groom very fine sandy loam: (S80LA-67-3)**	Ap	0-5	0.1	0.4	0.8	4.5	47.7	53.4	34.6	12.0	---	18.2	4.5	---	1.37	1.34
	B1g	5-12	TR	0.1	0.2	1.9	29.5	31.6	35.3	23.1	---	22.8	7.6	---	1.54	1.48
	B21tg	12-26	0.1	0.1	0.1	1.2	12.0	13.4	61.5	25.1	---	27.0	11.0	---	1.73	1.63
	B22t	26-33	1.1	0.9	0.5	1.5	10.0	14.0	60.4	25.6	---	25.6	12.6	---	1.71	1.61
	B23tg	33-48	0.5	0.4	0.4	1.5	9.9	12.7	57.1	30.2	---	27.4	13.8	---	1.85	1.74
	B24tg	48-78	0.2	0.2	0.1	1.2	11.5	13.2	55.9	30.9	---	28.1	14.5	---	1.79	1.71
Idee silt loam: (S80LA-67-2)**	Ap	0-6	0.3	0.4	0.7	3.8	5.2	10.3	69.9	19.8	---	25.9	9.8	---	1.53	1.33
	B21t	6-16	0.1	0.1	0.3	2.8	2.1	5.4	69.5	25.1	---	27.7	11.5	---	1.73	1.58
	B22t	16-34	0.6	0.8	0.6	3.0	1.9	6.9	58.0	35.2	---	30.3	14.7	---	1.78	1.45
	B23t	34-44	0.6	0.9	0.8	4.5	2.8	9.7	60.2	30.1	---	27.5	13.4	---	1.70	1.59
	IIB24tb	44-56	0.1	0.3	0.8	9.8	6.5	17.4	61.7	20.8	---	25.4	11.5	---	1.67	1.61
	IIB25tb	56-70	---	---	0.2	28.7	16.9	45.8	36.2	18.0	---	19.5	8.3	---	1.78	1.74

	IIB24t	34-46	TR	TR	2.6	44.2	7.2	54.0	20.0	26.0	---	17.3	10.0	---	1.62	1.75
	IIB31t	46-62	TR	TR	2.9	58.4	7.1	68.4	14.9	16.6	---	12.6	6.5	---	1.80	1.77
	IIB32	62-76	---	---	1.2	75.0	6.0	82.2	5.0	12.8	---	9.6	5.1	---	1.69	1.65
	IIB33	76-90	---	---	3.1	77.0	4.1	84.3	4.2	11.5	---	9.9	5.0	---	1.72	1.69
Tillou silt loam: (S78LA-67-4)*	A1	0-5	1.7	1.1	1.5	6.0	6.6	16.9	71.2	11.9	5.5	29.9	7.3	1.18	1.25	---
	A2	5-8	1.6	0.9	1.3	4.8	4.9	13.5	68.8	17.7	9.5	23.9	7.2	1.44	1.50	---
	B21t	8-15	1.7	0.8	1.2	4.3	4.8	12.8	65.9	21.3	9.0	23.4	8.5	1.42	1.47	---
	B&A	15-20	1.3	0.7	1.1	4.3	4.4	11.8	66.5	21.7	9.4	24.4	8.5	1.44	1.50	---
	A&B	20-30	2.1	0.8	1.2	4.2	4.6	12.9	65.9	21.2	13.1	23.4	8.5	1.51	1.54	---
	B'22t	30-40	1.3	0.7	1.0	3.7	3.9	10.6	58.1	31.3	21.9	22.8	13.4	1.53	1.63	---
	IIB'23t	40-48	1.1	0.8	1.0	3.4	3.7	10.0	56.6	33.4	22.7	24.7	14.7	1.44	1.62	---
	IIB'24t	48-66	1.0	0.6	1.5	7.0	7.7	17.8	58.9	23.3	15.1	22.7	10.4	1.58	1.69	---
	IIB'25t	66-76	1.2	0.8	1.4	6.4	8.0	17.8	58.4	23.8	16.0	24.1	11.2	1.56	1.70	---

*Analysis by the National Soil Survey Laboratory, Soil Conservation Service, USDA.
**Analysis by the Soil Characterization Laboratory, Louisiana Agricultural Experiment Station.

[redacted]

	B22t	9-18	4.4	4.7	0.1	0.1	8.1	14.0	66.6	0.20	4.9	3.9	4.5	1.3	0.8	0.1	24.7
	B23t	18-28	3.8	4.8	0.1	0.1	7.5	14.0	62.9	0.20	4.9	3.8	4.4	1.3	1.0	0.1	20.4
	IIB24t	28-42	2.1	5.0	0.1	0.4	7.4	10.4	71.7	0.10	4.8	3.5	4.1	1.1	2.1	0.1	14.3
	IIB25t	42-56	1.2	2.5	0.1	0.5	6.1	7.9	53.2	0.10	4.9	3.4	4.2	0.8	2.1	TR	24.5
	IIB3	56-72	1.0	2.8	0.1	0.8	5.7	7.8	60.6	0.10	4.8	3.3	4.0	0.7	1.7	0.3	34.8
Groom very fine sandy loam: (S80LA-67-3)**	Ap	0-5	4.6	1.1	0.1	TR	2.4	6.2	91.9	1.00	6.7	5.8	6.3	0.3	0.1	TR	45.7
	B1g	5-12	1.0	0.4	TR	0.1	11.1	9.2	16.6	0.40	4.1	3.2	3.7	0.7	6.2	0.3	0.8
	B21tg	12-26	0.7	0.6	TR	0.6	15.3	12.1	16.1	0.20	4.2	3.0	3.5	0.9	9.3	0.2	0.6
	B22t	26-33	2.2	2.6	TR	2.2	11.4	14.5	48.4	0.10	4.6	2.9	3.7	0.6	6.4	0.6	0.7
	B23tg	33-48	3.1	4.7	0.1	4.1	10.3	16.2	73.8	0.10	4.4	2.9	3.8	0.5	5.2	0.2	0.2
	B24tg	48-78	3.6	6.1	0.1	6.1	8.4	16.4	96.2	0.10	4.4	3.0	4.1	0.9	3.1	0.2	0.7
Idee silt loam: (S80LA-67-2)**	Ap	0-6	5.9	3.8	0.2	TR	7.8	15.1	65.6	1.30	4.2	4.7	5.9	0.6	0.1	TR	64.1
	B21t	6-16	6.0	4.7	0.1	TR	7.3	15.3	70.8	0.30	3.6	4.4	6.0	0.8	0.9	0.3	12.6
	B22t	16-34	6.6	7.0	0.1	0.1	7.3	19.5	71.3	0.20	5.1	3.9	4.9	1.5	0.3	0.2	0.8
	B23t	34-44	6.1	6.9	0.1	0.2	6.1	16.9	77.3	0.20	5.6	4.3	5.2	1.3	0.1	0.1	10.8
	IIB24tb	44-56	5.2	6.1	0.1	0.2	5.2	14.6	76.7	0.10	5.9	4.4	5.4	1.2	0.1	TR	15.1
	IIB25tb	56-70	3.8	4.7	0.1	0.2	3.5	9.4	92.7	0.10	6.1	4.5	5.5	0.9	0.1	TR	13.4

TABLE 21.--CHEMICAL TEST DATA ON SELECTED SOILS--Continued

Soil and sample number	Horizon	Depth from surface	Extractable bases				Extractable acidity	Cation exchange capacity (NH_4OAc)	Base saturation	Organic carbon	pH			Extractable iron	Extractable aluminum	Extractable hydrogen	Extractable phosphorus
			Ca	Mg	K	Na					1:1 H_2O	1:1 KCl	1:2 $CaCl_2$				
		In	Meq/100g						Pct	Pct				Pct	--Meq/100g-		Ppm
Libuse silt loam: (S78LA-67-1)*	A1	0-4	1.2	0.3	0.1	---	4.3	6.0	27.0	1.45	5.6	4.8	5.1	0.9	---	---	---
	B1	4-7	2.6	0.6	0.1	---	3.5	5.9	56.0	0.19	5.3	4.2	4.6	1.1	0.3	---	---
	B21t	7-12	4.8	1.2	0.2	---	5.2	9.3	67.0	0.31	5.2	4.0	4.5	1.8	0.5	---	---
	B21t	12-20	5.0	1.6	0.2	---	4.8	10.5	65.0	0.19	5.3	4.1	4.7	2.0	0.3	---	---
	B22t	20-27	3.3	1.5	0.1	---	4.2	7.9	62.0	0.08	5.2	4.0	4.5	1.4	0.6	---	---
	Bx1	27-40	1.1	1.0	TR	0.1	5.3	7.0	31.0	0.01	5.1	3.7	4.1	1.1	2.9	---	---
	Bx2	40-51	0.9	1.4	TR	0.4	7.9	9.8	28.0	0.01	5.2	3.5	3.9	1.2	4.7	---	---
	Bx3	51-60	2.0	2.6	TR	1.0	7.0	12.0	47.0	0.01	5.2	3.4	4.0	1.2	3.6	---	---
	B3	60-70	3.0	3.0	0.1	1.5	5.0	12.4	65.0	TR	5.0	3.2	4.0	1.3	2.0	---	---
Mollicy loam: (S80LA-67-4)**	Ap	0-5	1.5	0.5	0.1	TR	6.1	6.8	35.1	1.00	4.2	3.6	4.0	0.3	1.5	0.1	2.2
	B21t	5-14	0.3	0.6	TR	TR	12.1	9.1	1.0	0.30	3.9	3.3	3.6	1.1	6.8	0.5	0.6
	B22t	14-26	TR	0.9	TR	TR	14.7	12.5	0.8	0.10	4.0	3.2	3.6	1.1	8.7	0.3	TR
	B23t	26-34	TR	0.9	TR	0.1	14.8	12.6	0.7	0.10	4.0	3.1	3.6	1.2	9.5	0.2	TR
	IIB24t	34-46	TR	0.9	TR	0.1	13.5	11.5	0.8	0.10	4.3	3.1	3.5	1.0	8.6	TR	TR
	IIB31t	46-62	TR	0.6	0.1	TR	8.9	7.8	0.9	0.10	4.4	3.1	3.5	0.6	5.7	0.3	TR
	IIB32	62-76	TR	0.6	0.1	0.1	6.9	6.2	1.1	0.10	4.3	3.2	3.6	0.5	4.3	0.4	1.7
	IIB33	76-90	TR	0.6	0.1	TR	6.4	5.7	13.0	0.10	4.2	3.3	3.6	0.7	4.0	0.3	1.9
Tillou silt loam: (S78LA-67-4)*	A1	0-5	2.7	1.0	0.1	---	8.0	9.4	40.0	2.00	5.3	4.2	4.6	1.3	0.4	---	---
	A2	5-8	1.9	1.1	TR	---	6.3	8.2	37.0	0.39	4.9	3.7	4.1	1.9	2.0	---	---
	B21t	8-15	1.2	1.1	TR	---	7.8	8.9	26.0	0.26	4.8	3.6	4.0	2.0	3.4	---	---
	B&A	15-20	0.9	1.2	0.1	0.1	8.2	8.9	26.0	0.16	4.8	3.6	3.9	1.7	3.6	---	---
	A&B	20-30	0.6	1.2	0.1	0.3	8.0	8.9	25.0	0.15	5.2	3.6	3.9	1.7	4.1	---	---
	B'22t	30-40	1.7	3.1	0.1	1.2	9.2	13.8	44.0	0.11	5.4	3.3	4.0	1.8	5.0	---	---
	IIB'23t	40-48	2.5	3.9	0.1	1.8	8.4	15.6	53.0	0.10	5.4	3.3	4.1	1.5	3.6	---	---
	IIB'24t	48-66	3.2	3.4	0.1	2.1	3.0	10.8	81.0	0.10	6.1	3.8	4.8	1.1	---	---	---
	IIB'25t	66-76	3.8	3.5	0.1	2.5	2.1	11.4	87.0	0.10	6.6	4.3	5.4	1.1	---	---	---

*Analysis by the National Soil Survey Laboratory, Soil Conservation Service, USDA.
**Analysis by the Soil Characterization Laboratory, Louisiana Agricultural Experiment Station.

[redacted]	12-20	B21t	KK3, MI2
	51-60	Bx3	KK3, MI2, QZ1
Tillou silt loam: (S78LA-67-4)	5-8	A2	KK2, MI1, MT1
	8-15	B21t	KK3, VR2, MI1, QZ1
	48-66	IIB'24t	MV3, KK3, MI1

*In this column the alphabetical letter represents the kind of mineral, and the number represents the relative amount of the mineral. Minerals are listed in order of decreasing abundance.

Kind of mineral

GE--Goethite
KK--Kaolinite
MI--Mica
MT--Montmorillonite
MV--Montmorillonite-Vermiculite
QZ--Quartz
VM--Vermiculite-mica
VR--Vermiculite

Relative amount of mineral

1--Trace
2--Small (less than 10 percent)
3--Moderate (10 to 40 percent)
4--Abundant (greater than 40 percent)

N OF THE SOILS

or higher taxonomic class
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Typic Fragiudalfs
entic Dystrochrepts
c Fragiudults
c Hapludalfs
Typic Ochraqualfs
c Glossaquic Hapludalfs
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series. See text for description of its

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