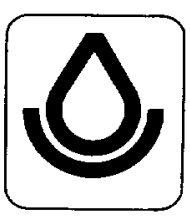
SOIL SURVEY OF

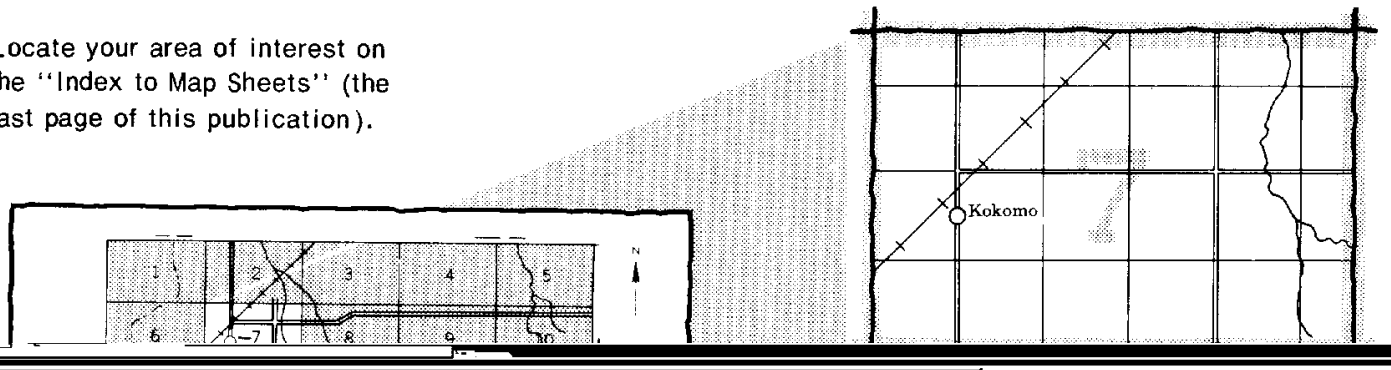
St. Martin Parish, Louisiana

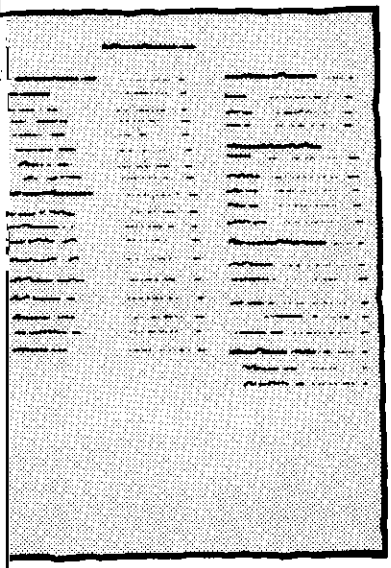


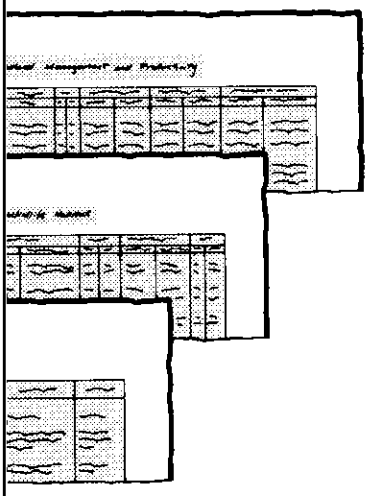
United States Department of Agriculture
Soil Conservation Service
In cooperation with
Louisiana Agricultural Experiment Station

HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).







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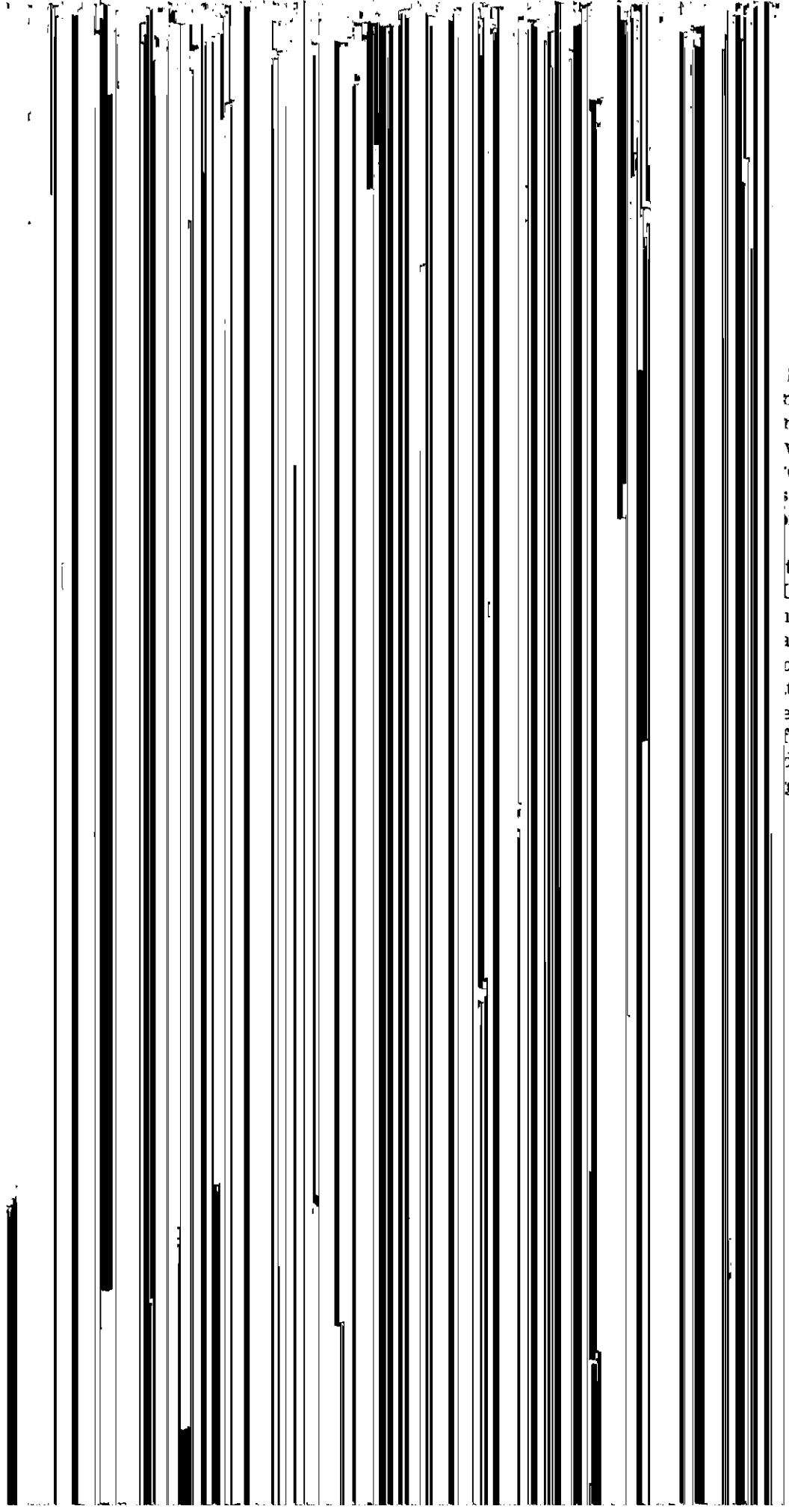

Soil Survey, a *joint effort*
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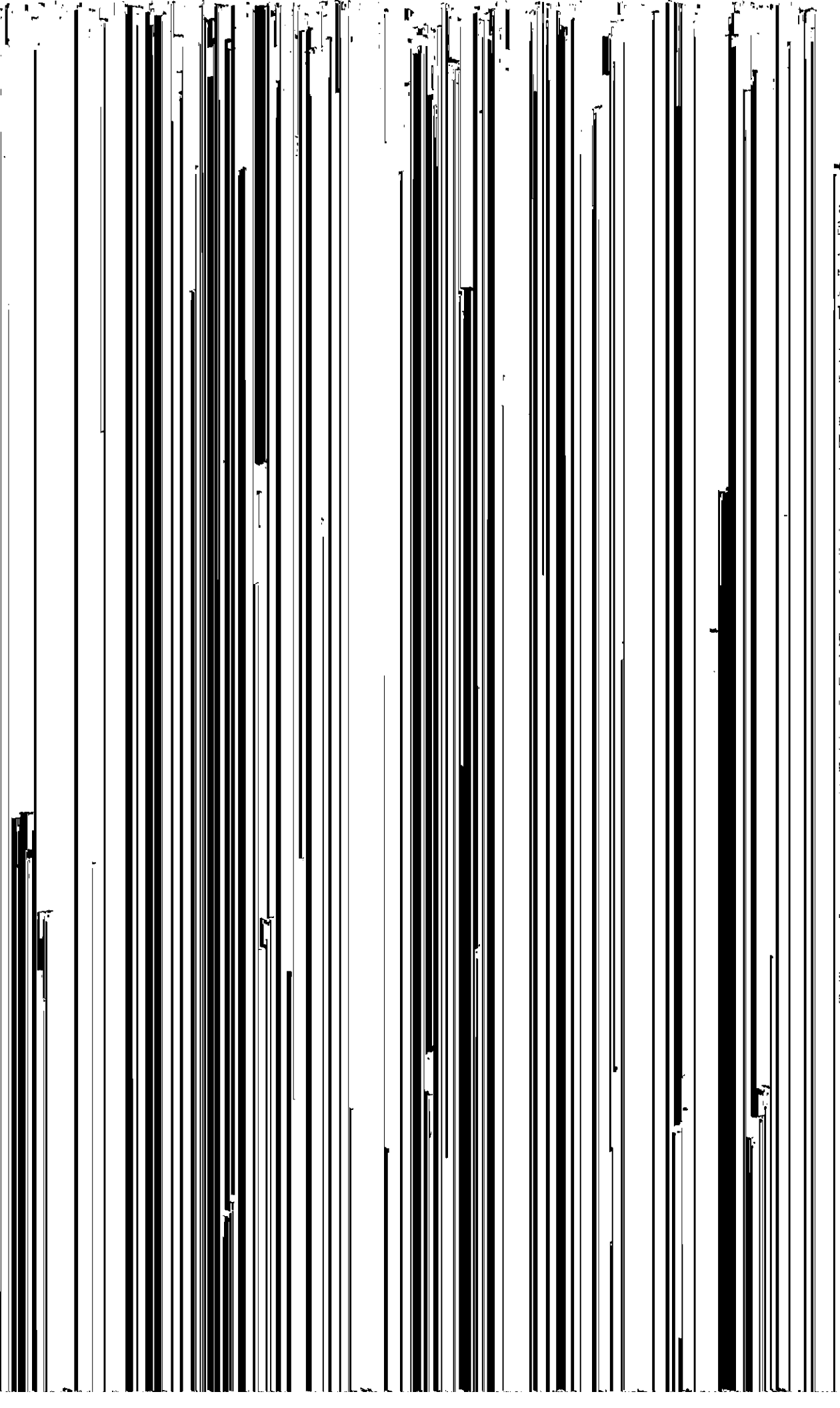

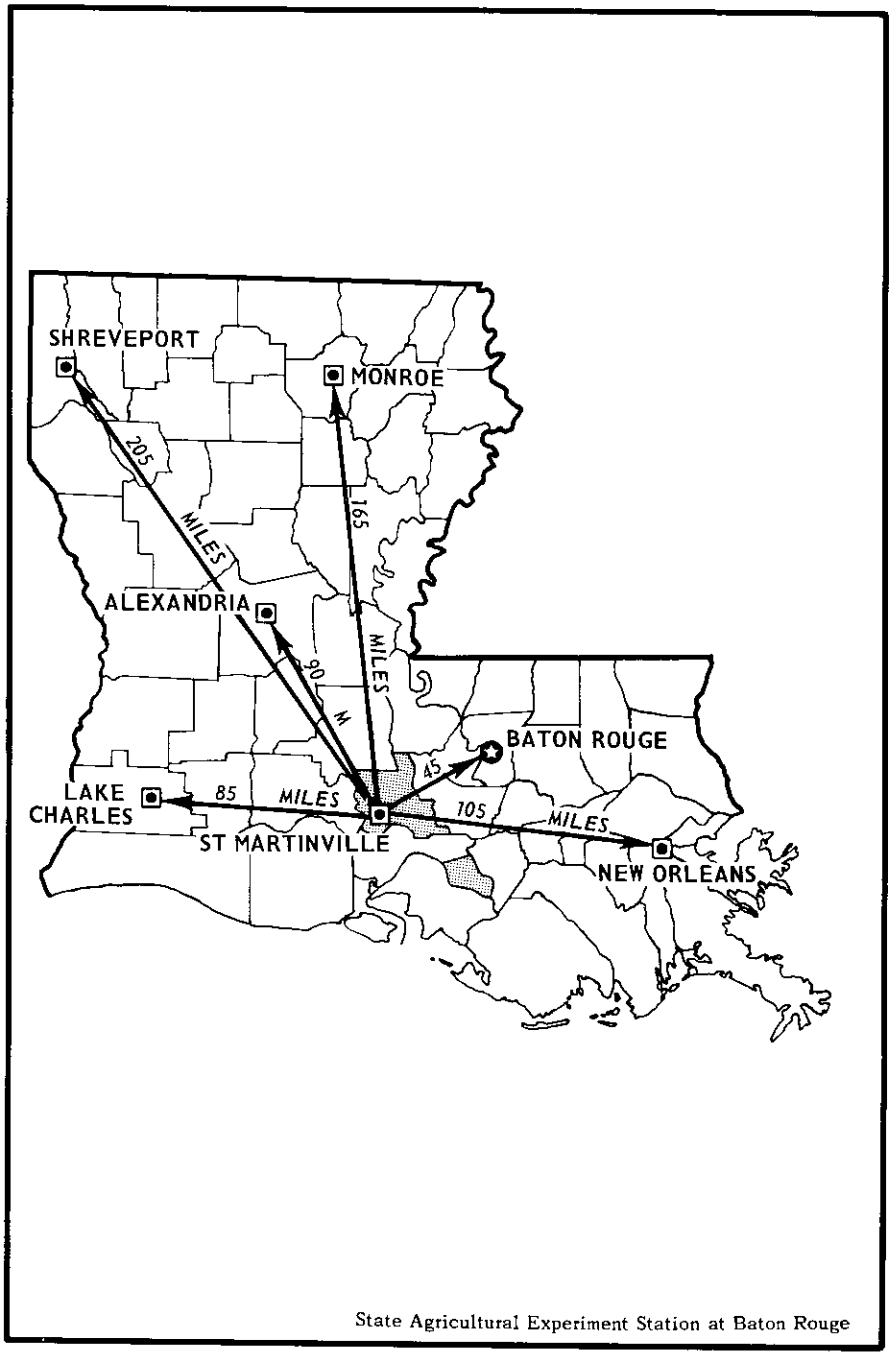

Location of St. Martin Parish in Louisiana.

H, LOUISIANA

White, Jerry J. Daigle,

ervation Service, in
periment Station

eastern half of the alluvial plain is in the asin Floodway. The floodway is part of a control system operated by the U. S. Corps Since 1963, control locks have been regu- about 30 percent of the Mississippi River Atchafalaya River distributary. All of the bject to flooding. Much of the area is sub- g and deposition. Floodway flow rights are Federal Government. The area is mainly lthough a few hunting lodges have been oints on natural levees where flooding is d. The soils within the floodway are used dland, fish, wildlife habitat, and recreation. deep water crawfish are harvested from the floodway each year. A significant nd gas is also produced in these areas.

f the alluvial plain that is outside the asin Floodway is mostly in the central and of the parish. A small area is outside the e eastern edge of the parish. The east and ya Basin protection levees protect most of plain from flooding by waters of the iver. Nevertheless, some soils at a low looded by runoff from higher areas. The of Bayou Teche and its distributaries make e area outside the floodway. Nearly level dominant on the higher part of the natural soils are medium in natural fertility, but ertilizers is good. Their loamy texture, pes, and fairly good surface drainage make ice for crops. Most of the acreage is in all acreage is in homesites and pasture. Su- main crop. The high elevation makes these esites, because they have a minimal chance d. Level clayey soils are dominant on the he natural levees and in areas adjacent to e natural fertility of these clayey soils is is needed for most crops. Most of the area inly sugarcane, rice, and soybeans. These used for crawfish farming (fig. 1). Level also dominant in the swamp areas outside

abrupt and rather large drop in temperature, but cold spells seldom last more than 3 days. Table 1 gives data on temperature and precipitation and table 2 gives data on the probability of last freezing temperatures in spring and first in fall.

St. Martin Parish experiences a wide range in temperature throughout the year, but the extremes are not so great as further inland. In table 1, the probable very high and very low temperatures are shown. In 2 years in 10, July and August will have at least 4 days with temperatures of 97 degrees F or higher, and December and January will have at least 4 days with temperatures of 28 degrees or lower.

A temperature of 90 degrees or higher occurs on an average of 100 days from May through October. When temperatures are 90 degrees or higher, relative humidity never exceeds 79 percent. It ranges between 50 and 79 percent, however, during 62 percent of the hours with such high temperatures. In winter when the temperature is below 50 degrees, relative humidity is 50 percent or higher 92 percent of the time, and is 80 to 100 percent during 46 percent of the time. A temperature of 32 degrees or lower occurs on an average of 15 days in winter. There is only a 25 percent chance of the temperature dropping to 20 degrees or lower in an average winter.

Rainfall is distributed fairly evenly throughout the year and is at a minimum in October, which is characteristic of the state. Over a span of 67 years, annual rainfall has varied from 36 to nearly 100 inches. Snow is generally light and occurs at intervals of several decades. In February of 1895, however, a record-setting 14 to 20 inches of snow fell in the parish.

Precipitation is adequate for crops that require plenty of moisture, but in some years precipitation is either inadequate or excessive. Table 1 shows that on an average of 1 year in 10 June will have less than 1.30 inches or more than 10.72 inches.

During the past 85 years, 5 hurricanes have crossed the parish, as have the centers of 8 tropical storms. Winds of hurricane force occur about once in 29 years in the northwestern part of the parish and once in 10 years in the lower cutoff portion of the parish. Gales from hurricanes and tropical storms occur about once in 7 years in the main part of the parish and once in 5 years in the lower cutoff part. Tornadoes can be expected about once in 8 years, damaging hailstorms once in 20 years, and severe thundersqualls once in 14 years.

Landforms and Quaternary Geologic History

St. Martin Parish includes a group of landforms and geologic formations characteristic of southern Louisiana. The Prairie Terrace (terrace uplands) formed by ancestral Mississippi Rivers late in the Pleistocene Epoch occurs in the extreme northwestern and southwestern parts of the parish. The Mississippi River alluvial plain consists of large natural levee ridges. Those in the central and

st of the Prairie Terrace in this region was ap-
ıtly deposited when sea level was higher than at
ent, probably during interglacial time. That particular
of the Prairie Formation within St. Martin Parish is
n as the Vermilion Prairie, because the Vermilion
r mainly follows the old Mississippi meander loops
ı debouched into an ancient deltaic plain far seaward
the present Gulf Coast.
late Prairie time, the lower course of the Mississippi
r shifted to the east, occupying channels in what is
Terrebonne Parish. This phase of Prairie deposition
d when sea level was lowered about 400 feet during
ast major glaciation (Wisconsin), and the Mississippi
r entrenched its alluvial valley (*6*). During this time
meandering Mississippi River scalloped the walls
the western side of its valley, forming a 15-foot
pment in the southwestern part of the parish that
rated the older Prairie terrace in the west from the
ger Mississippi River alluvial plain in the east (fig.

llowing deposition of the Prairie Terrace, wind-blown
loess) mantled the terrace surface. The loess is about
et thick near the escarpment of the Mississippi River
ial plain, but it thins about 6 inches a mile as it ex-
s westward. The loess is thought to be derived from
ırce under the present Mississippi Valley, east of St.
in Parish (*4*).
LT DOMES. A salt dome is a localized domal an-
ıe, formed by the intrusion of roughly cylindrical
s of salt that originate in sedimentary beds, usually
great depth. The origin of salt domes is quite com-
It is thought to be related mainly to piercement, or
ing, of the overlying sediments by the salt as it is
d upward by regional subsidence and differences in
ific gravity between salt and sediments (*9*). The Anse
Butte, Bayou Bouillon, and Section 28 salt domes
r in St. Martin Parish. The best known and most
ıinent dome is Anse La Butte. This dome stands at
levation of approximately 17 feet above the surround-
alluvial plain. It is mantled with several feet of loess.
salt dome has long been a source of salt and petrole-
The loess mantle at the lower elevations around the
of the dome is buried by alluvial sediments. Locally
s of the Anse La Butte salt dome have collapsed as a
lt of subsurface solution, a phenomenon which is
ucing topographic features such as Flat Lake (*8*). The
ou Bouillon and Section 28 salt domes have had little
o influence on topography.

ter Supply

ORGE T. CARDWELL, hydrologist, Geological Survey Water
ırces Division, U.S. Department of the Interior, Baton Rouge,
iana, prepared this section.

ıe Atchafalaya River forms the eastern boundary of
Martin Parish, and Bayou Teche crosses the western
of the parish. These two large streams plus nu-
ous canals, lakes, and smaller streams constitute an

profiles almost alike make up a soil se-
different texture in the surface layer, all
series have major horizons that are
ess, arrangement, and other important
ach soil series commonly is named for a
phic feature near the place where a soil
s first observed and mapped. Gallion and
mple, are the names of two soil series.
ie United States having the same series
of the same characteristics.
ries can differ in texture of the surface
e, stoniness, or some other characteristic
of the soils. On the basis of such dif-
eries is divided into phases. The name of
ates a feature that affects management.
mphis silt loam, 1 to 3 percent slopes, is
ases within the Memphis series.
for classifying and naming the soils was
oil scientists drew the boundaries of the
n aerial photographs. These photographs
buildings, field borders, trees, and other
in drawing boundaries accurately. The
back of this publication was prepared
graphs.
wn on a soil map are called mapping
maps detailed enough to be useful in
agement of farms and fields, a mapping
uivalent to a soil phase. It is not exactly
se it is not practical to show on such a
scattered bits of soil of some other kind
een within an area that is dominantly of
se. Some mapping units are made up of
series, for example, Coteau-Frost com-
lating.
rvey is in progress, samples of soils are
for laboratory measurements and for en-
The soils are field tested and their suita-
ations (interpretations) are modified as
the course of the survey, and new in-
added to meet local needs. This is done
eld observations of behavior of different
different uses under different levels of
so, data are assembled from other
est results, records, field experience, and
able from state and local specialists. For
crop yields under defined practices are
farm records and from field or plot ex-
same kinds of soil.
of a soil survey is done when the soils
l, described, interpreted, and delineated
aphs and when the laboratory data and
een assembled. The mass of detailed in-
eeds to be organized so that it is readily
t groups of users, among them farmers,
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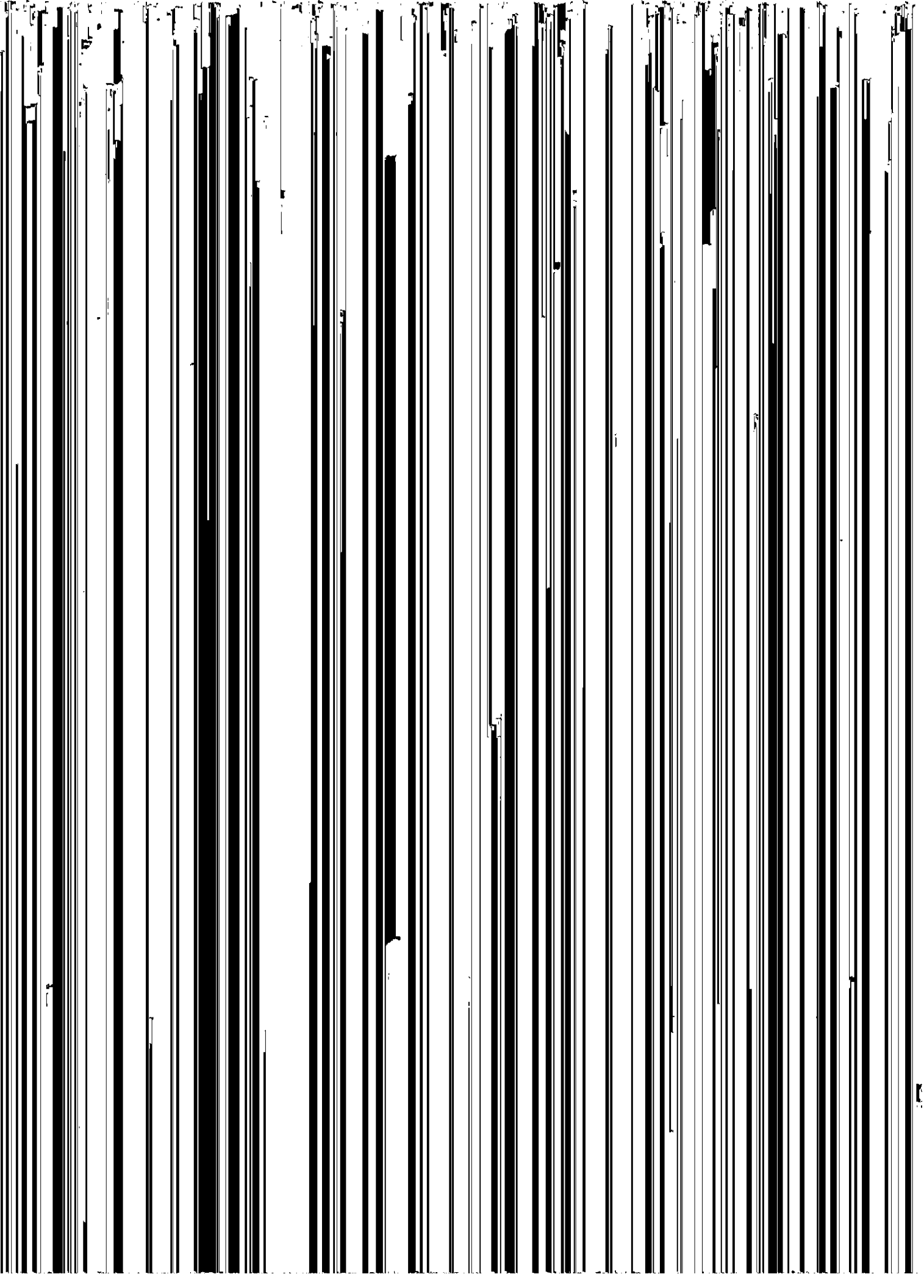
rmation is presented in an organized, un-
ner in this publication.



Iberia soils are at an intermediate elevation. Typically the surface layer is very dark gray silty clay 14 inches thick. The subsoil extends to a depth of 37 inches and is gray clay. The underlying material is light olive gray clay. These soils are poorly drained and very slowly permeable.

Of minor extent in this association are Dundee and Loreauville soils and Sharkey soils that frequently flood. The Dundee and Loreauville soils are at a higher elevation than the Baldwin soils. The Sharkey soils that frequently flood are mostly at an elevation of less than 10 feet.

Most of the acreage is in crops and pasture. A small acreage is in woodland. Most of the farms are large and privately owned.

The soils of this association are suitable to most crops and pasture plants grown in the parish. They are also suitable for development for wetland wildlife habitat. The very slow permeability of these soils make them desirable for rice culture and crawfish farming. Wetness is the principal limitation for most uses of these soils. Low strength and high shrink-swell potential limit their use for foundations or construction material. The present trend is for most of the acreage to remain in crops and pasture.

3. Memphis-Frost-Coteau Association

Level to moderately sloping, loamy soils on the terrace uplands

This association consists of loamy soils on ridges and in swales and along drains in the southwest corner of the parish. Elevation is mainly 25 to 38 feet above sea level.

This association makes up about 2 percent of the parish. It consists of about 50 percent Memphis soils, 25 percent Frost soils, and 13 percent Coteau soils. Patoutville and Calhoun soils make up most of the remaining 12 percent of the association.

Memphis soils are at the highest elevation. They occur on ridges. Typically the surface layer is dark brown silt loam 7 inches thick. The subsoil extends to a depth of 40 inches and is dark brown silty clay loam. Below this layer is dark yellowish brown silt loam. These soils are well drained and moderately permeable.

Frost soils are at the lowest elevation. They occur along the drains and in swales. Typically the surface layer is dark gray silt loam 6 inches thick. The subsurface layer is 14 inches of gray silt loam. The subsoil to a depth of 30 inches is gray silty clay loam. Below that to a depth of 46 inches it is light brownish gray silty clay loam. The underlying material is light brownish gray silt loam. These soils are poorly drained and slowly permeable.

Coteau soils are at a high elevation but are slightly lower than the Memphis soils. Typically the surface layer is dark brown silt loam 8 inches thick. The subsoil extends to a depth of 26 inches and is dark brown silt loam. The next layer to a depth of 70 inches is light brownish gray silt loam. These soils are somewhat poorly drained and moderately slowly permeable.

Of minor extent in this association are Calhoun and Patoutville soils. The Calhoun soils are in depressional areas. The Patoutville soils are closely associated with the Coteau soils.

Most of the acreage is in crops. Sugarcane is the main crop. A small acreage is in homesites and pasture. Most of the farms are large and privately owned.

The soils of this association are suited to most crops and pasture plants grown in the parish. They are easy to work. Erosion control practices are necessary when they are used for crops. The high elevation and loamy textures make the soils desirable homesites.

The main limitation for most uses of the Frost and Coteau soils is wetness. Low strength and high shrink-swell potential limit the use of all the soils for foundations or construction material. The present trend is for most of the acreage to remain in crops.

4. Acy-Coteau Association

Nearly level, loamy soils on the terrace uplands

This association consists of loamy soils on the terrace uplands in the northwest part of the parish. Elevation is mainly 17 to 22 feet above sea level. The west Atchafalaya Basin protection levee protects this association from flooding by the Atchafalaya River.

This association makes up about 1 percent of the parish. It consists of about 52 percent Acy soils and 32 percent Coteau soils. Frost, Calhoun, and Baldwin soils make up most of the remaining 16 percent of the association.

Acy soils are at the lowest elevation on the islands of terrace uplands. Typically the surface layer is dark grayish brown silt loam about 6 inches thick. The subsoil extends to a depth of 16 inches and is grayish brown silty clay loam. The next layer is 8 inches of yellowish brown silty clay loam. Below that, to a depth of 56 inches, is yellowish brown silt loam. The underlying material is gray silt loam. These soils are somewhat poorly drained and moderately slowly permeable.

Coteau soils are at the highest elevation on the islands of terrace uplands. Typically the surface layer is dark grayish brown silt loam about 7 inches thick. The subsoil extends to a depth of 13 inches and is dark brown silty clay loam. The next layer is 19 inches of brown silty clay loam. Below this layer is brown silt loam. These soils are somewhat poorly drained and moderately slowly permeable.

The minor soils in this area are Frost, Calhoun, and Baldwin soils. Frost soils are in swales between low ridges. Calhoun soils are in depressional areas. Baldwin soils are along drains at a lower elevation than the Acy soils.

Most of the acreage is in pasture and the Anse La Butte oil and gas field. Most of the farms are small and privately owned.

The loamy texture, the nearly level slopes, and the fairly high natural fertility of the soils make this associa-

way. The soils are subject to frequent flooding by the Atchafalaya River. Elevation is mainly about 10 feet above sea level in the northern part of the parish and about 1 foot in the southern part.

This association makes up about 37 percent of the parish. It consists of about 95 percent Fausse soils. Convent soils make up most of the rest.

Fausse soils are on broad, level to concave areas and in basins surrounded by high natural levees. Typically the surface layer is dark grayish brown mucky clay 7 inches thick. The subsoil extends to a depth of 16 inches and is dark gray clay. The next layer is 14 inches of gray clay. The underlying material is greenish gray clay. These soils are very poorly drained and very slowly permeable.

Of minor extent in this association are Convent soils. They are on natural levees of the Atchafalaya River distributaries at a higher elevation than Fausse soils.

All of the acreage is in woodland and is part of the Atchafalaya Basin Floodway. Some areas are used as wildlife habitat and for hunting and fishing. A small acreage is oil and gas fields. The Fausse soils are natural habitat for deepwater crawfish. Most of the acreage is owned by the State of Louisiana and by corporations, floodway flow rights belong to the Federal government.

Flooding, scouring, deposition, wetness, and a high water table are the main limitations for most uses. Low strength and high shrink-swell potential limit the use of the soils for foundations or construction material.

7. Convent Association

Nearly level, loamy soils that are inside the Atchafalaya Basin Floodway on the alluvial plain

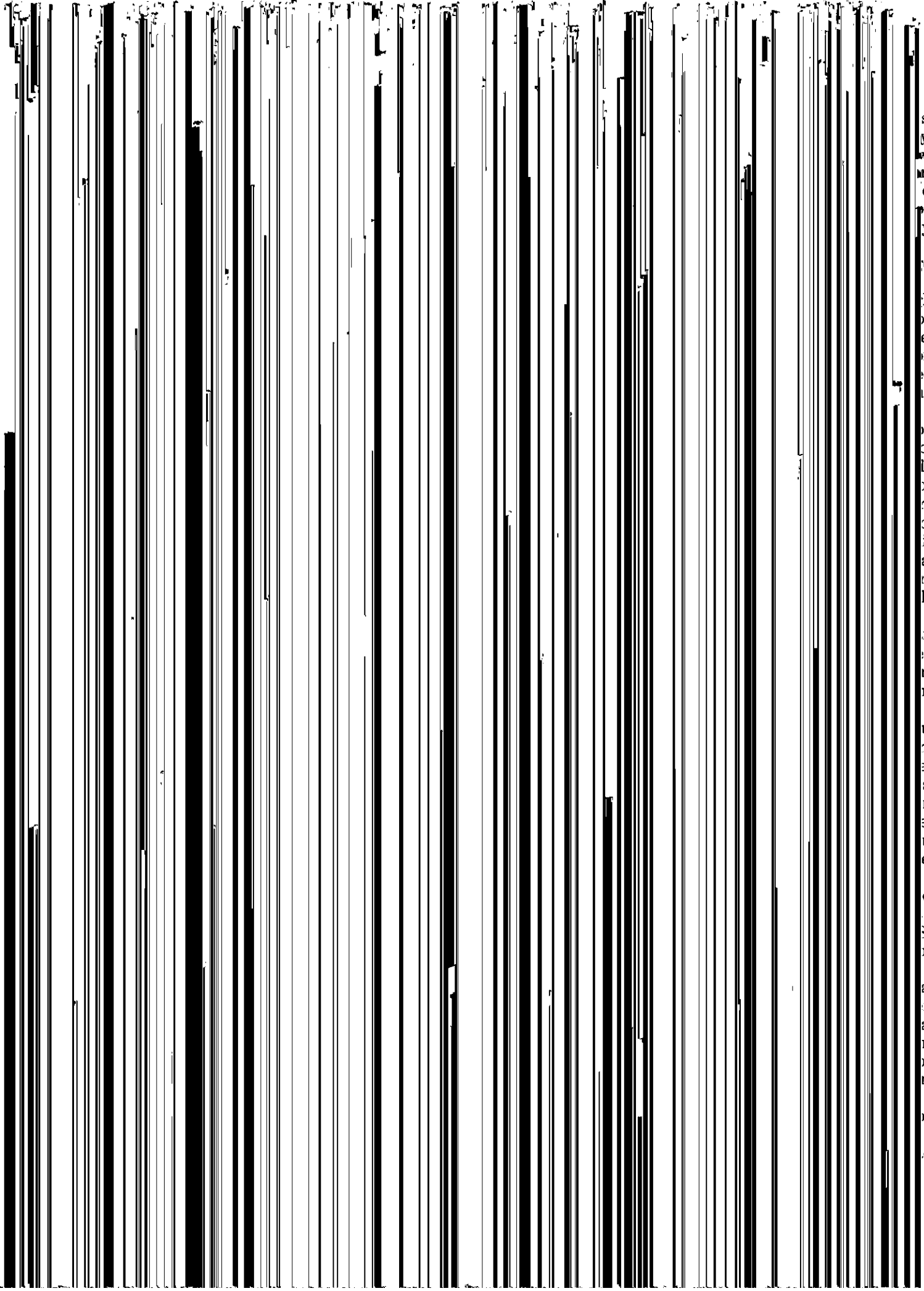
This association consists of loamy soils on natural levees at the highest elevation inside the Atchafalaya Basin Floodway. Most of this association is subject to frequent flooding by the Atchafalaya River. Elevation is mainly about 25 to 30 feet above sea level in the northern part of the parish and about 3 feet in the southern part. The highest areas are less frequently flooded.

This association makes up about 18 percent of the parish. It consists of about 91 percent Convent soils. Fausse soils make up most of the remaining 9 percent.

Convent soils are on the natural levees of the Atchafalaya River and its distributaries and in lake-fill. Typically the surface layer is dark grayish brown silt loam 4 inches thick. Below that is 24 inches of grayish brown very fine sandy loam. The next layer is 12 inches of grayish brown silt loam. Below that is a layer of grayish brown very fine sandy loam. These soils are somewhat poorly drained and moderately permeable.

Fausse soils occur in swamp areas farthest from the distributary channels at a lower elevation than Convent soils.

All of the acreage is in woodland and is part of the Atchafalaya Basin Floodway. The soils of the association are used as wildlife habitat and for recreation. Most of the acreage is owned by the State of Louisiana and by



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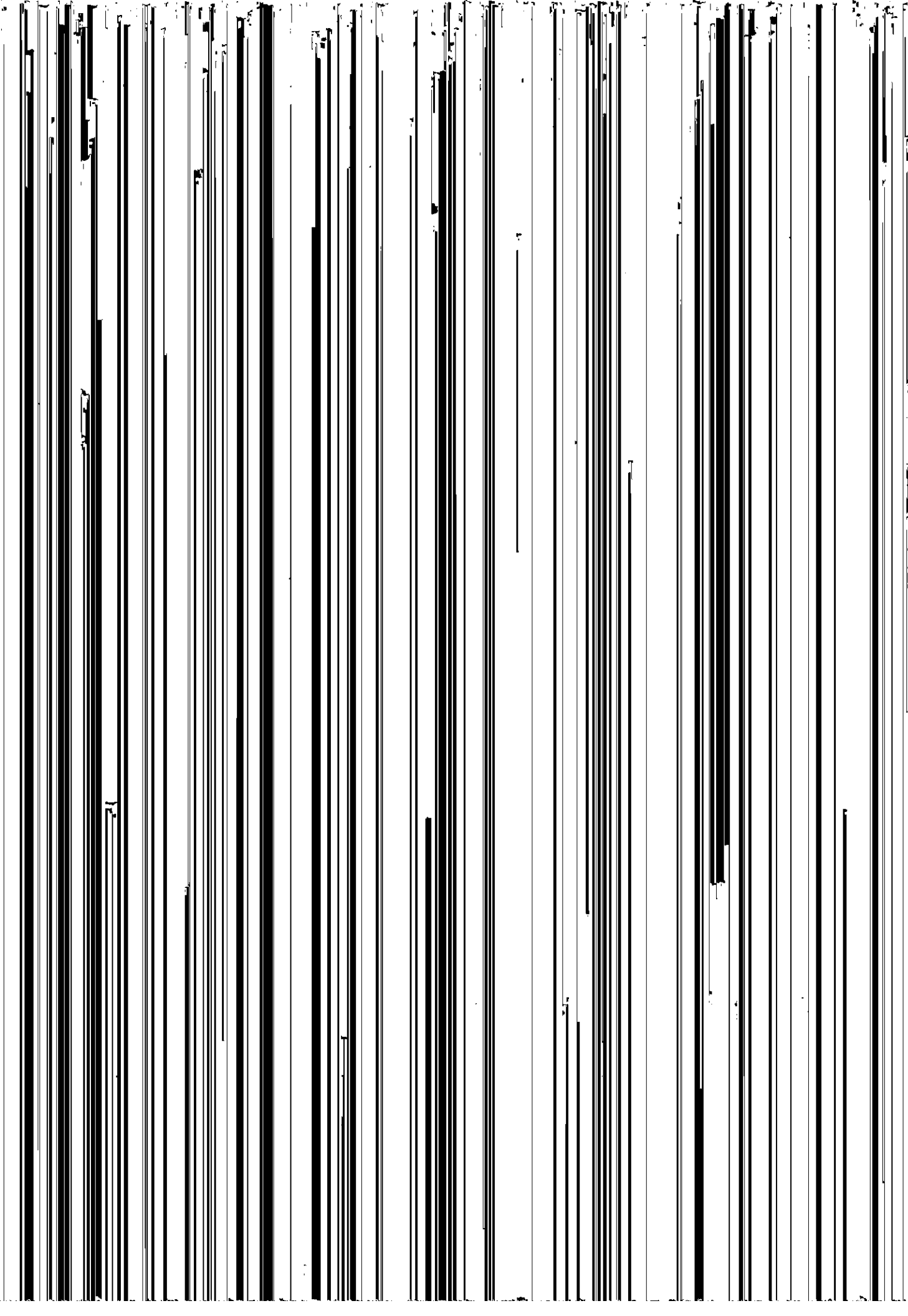

ss deposits. Slope is 0 to
Basin protection levee
l from flooding by the
ssociated with the more
ver elevations.
ng are a few small areas
Also included are small
slope of 1 to 3 percent
utte salt dome.
this soil is medium acid,
out 7 inches thick. The
of 13 inches, is strongly
The next layer extends
rongly acid, brown silty
brown. Below this layer
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ral fertility. Plant roots
nd air move moderately
the surface at a slow to
water table is 1.5 to 3
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and pasture.
corn, cotton, soybeans,
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keep in good tilth. It can
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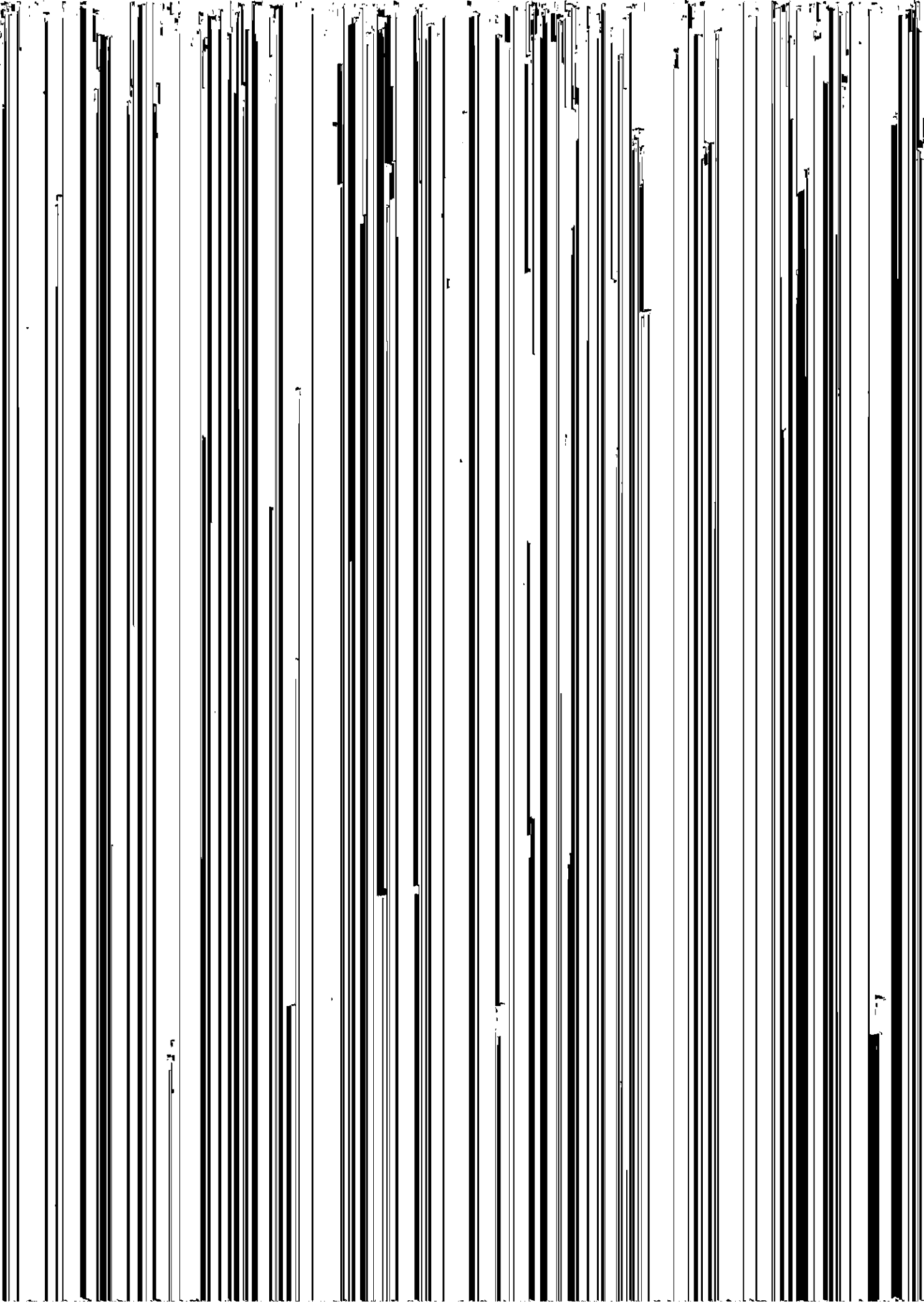

The Sharkey soil is high in natural fertility. Plant roots penetrate it with difficulty. Water and air move very slowly through it. Water runs off the surface at a slow rate. The seasonally high water table fluctuates between the surface and 2 feet below the surface during the months of December through April. The soil swells when wet and shrinks and cracks when dry. It can be worked only within a narrow range of moisture content. The surface layer is wet for long periods in winter and spring. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most of the acreage is in crops and pasture. Sugarcane is the principal crop.

Suitable crops are sugarcane, soybeans, and cotton. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, white clover, ryegrass, small grain, alyce clover, and dallisgrass.

The soils of this mapping unit are rather difficult to keep in good tilth. Drainage is needed to remove excess water from the swales. Short irregular slopes and variable textures interfere with tillage. Land smoothing or grading will improve surface drainage and permit more efficient use of farm equipment, but in many places a very large amount of earth will have to be moved. Proper management of crop residue helps maintain the organic-matter content and reduce soil loss caused by erosion. A complete fertilizer is needed for most crops and pasture plants. Lime is generally needed for the Dundee soils.

Wetness is a limitation for such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation if the Dundee soil is used for foundations or as construction material. High shrink-swell is a limitation if the Sharkey soil is used for foundations or as construction material. Capability subclass IIIw; woodland group 2w.

FA—Fausse association. These soils occur in large tracts of swamp throughout the alluvial plain outside the Atchafalaya Basin Floodway. They are subject to flooding. These soils formed in clayey alluvium. Slope is less than 0.25 percent. Elevation ranges from 1 foot below sea level to 10 feet above sea level. Though protected from flooding by the east and west Atchafalaya Basin protection levees, the soils are flooded most of the time by runoff from higher areas. Flooding is less severe in the Spanish Lake and Lake Grand Marie areas because drainage canals have been constructed. The composition of this unit is more variable than that of most other units in the parish, but it has been controlled well enough for making interpretations for the expected uses of the soils.

The Fausse soils make up 70 percent of the association. Sharkey soils, spoil deposits, and soils that are similar to Fausse soils but have semifluid underlying layers, make up most of the rest. The Sharkey soils are in the higher areas adjacent to major bayous and on low ridges inside the swamp. The spoil deposits are from dug channels. The communities of Stephenville and Belle River are on spoil deposits at a high elevation and generally are not subject to flooding. The soils similar to Fausse soils that have

layers are in old lake areas at the
n the swamp.

face layer of the Fausse soils is
rayish brown mucky clay about 4
soil extends to a depth of 14 inches
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oth of 28 inches, is moderately al-
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sociation are high in natural fertility.
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maximum depth of about 5 feet for
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able to plants most of the time.
e is in woodland and is used mostly
The commonly occuring native trees
ck willow, green ash, honeylocust,
rberry, sweetgum, water hickory,
r tupelo. A more complete list of na-
growing on these soils is in the sec-
gement and Productivity."
suited to the economic production of
pasture plants because of the flood-
ermanent high water table. Flooding,
water table are limitations for most
lasst VIIw; woodland group 3w.

These soils occur in large tracts of
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hese soils formed in clayey alluvium.
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hat of most other units in the parish,
trolled well enough for making in-
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make up 60 percent of the mapping
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t. Convent soils are at the highest
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face layer of the Fausse soils is
grayish brown mucky clay about 7
soil extends to a depth of 16 inches
gray clay. The next layer extends to
and is moderately alkaline, gray clay
he underlying material is moderately
y clay mottled with olive.

These soils are high in natural fertility. Water and air move very slowly through them. A water table fluctuates between 0.5 foot above the surface and 1.5 feet below the surface throughout the year. The soils are flooded with up to 14 feet of water for 6 to 10 months of the year. Some areas are continuously flooded throughout most years. Excess water is available to plants most of the time.

The flooding cycle generally begins late in November and peaks in March and April. The drying cycle, when it occurs, is late in summer or early in fall. The texture of the surface layer of soils adjacent to major distributary channels is subject to change as new sediments are deposited by floodwaters.

All of the acreage is in woodland and is used for wildlife habitat and as part of the Atchafalaya Basin Floodway. The Federal government has floodway flow rights. A small acreage is oil and gas fields. The common native trees are baldcypress, black willow, green ash, pumpkin ash, sugarberry, water hickory, and water tupelo. A more complete list of native plants on these soils is in the section "Woodland Management and Productivity."

These soils are not suited to the economic production of cultivated crops and pasture plants because of the flooding hazard and the permanent high water table. They provide the main natural habitat for deepwater crawfish.

Flooding, scouring, deposition, wetness and a high water table are the main limitations for most uses. Capability subclass VIIw; woodland group 3w.

Ft—Frost silt loam, occasionally flooded. This soil is parallel and adjacent to drains on the terrace uplands in the southwestern and northwestern parts of the parish. It formed in loamy loess deposits. It is subject to occasional flooding. Slope is 0 to 1 percent. This soil is associated with the better drained Memphis soils that occur at a higher elevation.

Included with this soil in mapping are a few small areas of soils that are similar to Frost soils but have a black surface layer 12 to 20 inches thick. These soils occur along Coulee LaSalle and along Cyprus Bayou near the parish boundary.

Typically the surface layer of this soil is medium acid, dark gray silt loam about 6 inches thick. The subsurface layer extends to a depth of 24 inches; it is very strongly acid gray silt loam. The subsoil to a depth of 60 inches is a strongly acid, gray silty clay loam mottled with yellowish brown.

This soil is moderate in natural fertility. Plant roots penetrate it easily. Water and air move slowly through it. Water runs off the surface at a slow rate. A seasonal high water table fluctuates between the surface and 1.5 feet below the surface from December through April. The surface layer is wet for long periods in winter and spring. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most of the acreage is in woodland. A small acreage is in pasture.

y but can be broken up by deep plowing or grading or smoothing will improve surface permit more efficient use of farm equip- crop residue management will help maintain organic matter and reduce soil loss caused complete fertilizer is generally needed for d pasture plants. Lime is generally not

ell suited to homesites because of its high strength is a limitation for its use for as construction material. Capability sub- d group 2o.

-Perry complex, gently undulating. These row ridges and in swales immediately ad- llel to Bayou Teche and Catahoula Coulee part of the parish. They formed in loamy uvium. The loamy Gallion soils make up nt of the area. They occur on ridges about that are up to 6 feet higher than the yey Perry soils make up about 30 percent ey occur in swales that are about 100 feet nd Perry soils are so closely intermingled asible to map them separately at the scale) to 5 percent. These soils are 5 to 10 feet adjacent Dundee and Baldwin soils on the of Bayou Teche and Catahoula Coulee. The ya Basin protection levee protects them y the Atchafalaya River.

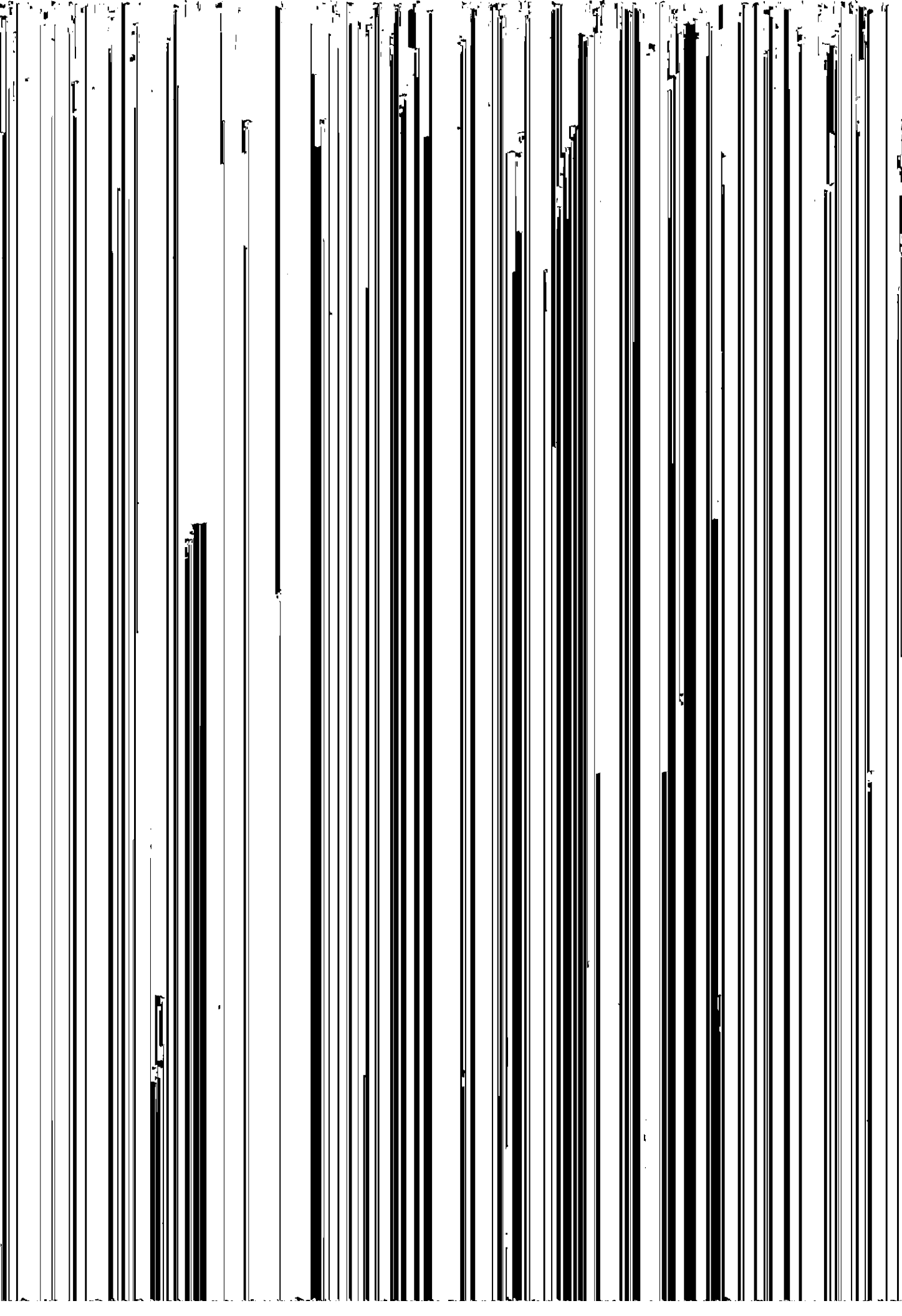
h these soils in mapping are small areas of undee soils. Also included are a few small hat are similar to Gallion soils but have a tent in the subsoil; small areas where slope nt; and small areas of Perry soils that are ded.

surface layer of the Gallion soil is slightly vn silt loam about 6 inches thick. The sub- nds to a depth of 27 inches, is slightly acid, silty clay loam. The next layer, which ex- th of 41 inches, is neutral, reddish brown The underlying material is moderately al- own stratified silt loam and silty clay loam.

soil is high in fertility. Plant roots sily. Water and air move through it at a Water runs off the surface slowly. The soil significant periods in any season. Typically water table is more than 6 feet below the places it is at a depth of 4 to 6 feet from ugh April. Sufficient water is available to years.

surface layer of the Perry soil is medium ish brown silty clay loam about 5 inches oil, which extends to a depth of 21 inches, l, gray clay mottled with reddish brown. layer is 18 inches of slightly acid reddish ttled with gray. The underlying material is reddish brown clay mottled with gray.

oil is fairly high in natural fertility. Water hrough it at a very slow rate. Water runs



months of December through April. Sufficient water is available to plants in most years.

Most of the acreage is in crops. A small acreage is in pasture. Sugarcane is the main crop.

The high fertility, loamy texture, and nearly level slope make this the choice soil for crops in the parish. Suitable crops are sugarcane, cotton, corn, soybeans, rice, and truck crops. Suitable pasture plants are common bermudagrass, alyce clover, small grain, Pensacola bahiagrass, ryegrass, dallisgrass, white clover, and improved bermudagrass.

This soil is friable and easy to keep in good tilth. It can be worked over a somewhat wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for most cultivated crops. Land grading or smoothing will improve surface drainage and permit more efficient use of farm equipment. Proper crop residue management will help maintain the content of organic matter and will reduce the soil loss caused by erosion. A complete fertilizer is generally needed for most crops and pasture plants. Lime is not needed.

Wetness is a limitation for such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation for use as foundations or as construction material. Capability subclass IIw; woodland group 1w.

Me—Memphis silt loam, 1 to 3 percent slopes. This soil is on broad, convex stream divides on the terrace uplands in the northwestern and southwestern parts of the parish. It formed in loamy loess deposits. This soil is associated with the less well drained Coteau soils at a slightly lower elevation and the darker, less well drained Frost soils along the drainageways.

Included with this soil in mapping are a few small areas of Coteau and Calhoun soils. Also included are a few small areas of Memphis soils that have slopes of 5 to 8 percent.

Typically the surface layer is medium acid, dark brown silt loam about 6 inches thick. The subsoil, which extends to a depth of 40 inches, is strongly acid, dark brown silty clay loam. The underlying material is medium acid, dark yellowish brown silt loam.

This soil is moderate in fertility. Plant roots penetrate it easily. Water and air move through it at a moderate rate. Water runs off the surface at a medium rate, and this soil is not wet during any season. A seasonal high water table is more than 6 feet below the surface. The soil is desirable for homesites because it is at a high local elevation. Sufficient water is available to plants in most years.

Most of the acreage is in crops and pasture. Sugarcane is the main crop.

Suitable crops are sugarcane, corn, cotton, soybeans, sweet potatoes, and truck crops. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, ryegrass, improved bermudagrass, small grain, white clover, alyce clover, vetch, southern wild winter pea, and annual lespedeza.

This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Drought is not a serious hazard. Erosion is a problem where the soil is without vegetative cover. Traffic pans form easily, but can be broken up by deep plowing and chiseling. Proper crop residue management will help maintain the content of organic matter and reduce the soil loss caused by erosion. Stripcropping or contour farming is needed on cropland to help reduce erosion. A complete fertilizer and lime are needed for most crops and pasture plants.

Low strength limits the use of the soil for foundations or as construction material. Capability subclass IIe; woodland group 1o.

Mh—Memphis silt loam, 5 to 8 percent slopes. This is a moderately sloping soil on the escarpment between the terrace uplands and the alluvial plain and along major entrenched drainageways on the terrace uplands in the southwestern part of the parish. This soil formed in loamy loess deposits. It is associated with the darker, less well drained Frost soils at a lower elevation adjacent to the drainageways.

Included with this soil in mapping are a few small areas of Coteau soils. Also included along the base of the escarpment between the terrace uplands and the alluvial plain, are small areas of soils that are similar to Memphis soils but have a very dark colored surface layer, small areas of Memphis soils that have slopes of 8 to 12 percent, and small areas in which most of the original topsoil was removed by erosion.

Typically the surface layer is very strongly acid, dark yellowish brown silt loam about 4 inches thick. The subsoil extends to a depth of 48 inches. The upper part is 13 inches thick and is very strongly acid, dark brown silty clay loam. The lower part is strongly acid, dark yellowish brown silt loam. The underlying material is medium acid dark yellowish brown silt loam.

This soil is moderate in fertility. Plant roots penetrate it easily. Water and air move through it at a moderate rate. Water runs off the surface at a rapid rate, and the soil is not wet during any season. A seasonal high water table is more than 6 feet below the surface. The soil is well suited to homesites because it is at a high elevation. It erodes easily if not protected by vegetation. Sufficient water is available to plants in most years.

Most of the acreage is in crops and pasture. Sugarcane is the main crop.

Suitable crops are sugarcane, soybeans, and truck crops. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, improved bermudagrass, ryegrass, small grains, white clover, alyce clover, and annual lespedeza.

This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Plants are sometimes damaged by lack of water during summer and fall. Traffic pans form easily but can be broken up by deep plowing or chiseling. The slopes hinder the use of some farm equipment. Proper crop residue management

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are common bermudagrass, Pensacola bahiagrass, ryegrass, improved bermudagrass, alyce clover, vetch, Southern wild winter pea, small grain, white clover, and annual lespedeza.

This soil is friable and easy to keep in good tilth. It can be worked over a fairly wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for most cultivated crops. Land grading and smoothing will improve surface drainage and permit more efficient use of farm equipment. Irrigation is needed for rice. Proper crop residue management will help maintain the level of organic matter and reduce the soil loss caused by erosion. A complete fertilizer and lime are needed for most crops and pasture plants.

Wetness is a limitation of the soil for septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation for use as foundations or as construction material. Capability subclass IIw; woodland group 1w.

Sh—Sharkey clay. This soil is on broad level areas adjacent to the Bayou Teche and Catahoula Coulee natural levees. It formed in clayey alluvium. Slope is less than 0.5 percent. The west Atchafalaya Basin protection levee protects this soil from flooding by the Atchafalaya River. The soil is associated with the less clayey Baldwin soils that occur on the natural levees at a higher elevation.

Included with this soil in mapping are small areas of Baldwin and Iberia soils. Also included are small areas of soils that are similar to Sharkey soils but more acid throughout, and small areas of soils along Bayou Fusilier and Bayou Vermilion that are similiar to Sharkey soils but reddish brown in color.

Typically the surface layer is slightly acid, dark gray clay about 5 inches thick. The subsoil, which extends to a depth of 15 inches, is slightly acid dark gray clay mottled with yellowish brown. The next layer extends to a depth of 25 inches and is moderately alkaline, dark gray clay mottled with shades of brown. The next layer is 27 inches of moderately alkaline, gray clay mottled with light olive brown. The underlying material is moderately alkaline gray silty clay loam mottled with yellowish brown.

This soil is high in natural fertility. Plant roots penetrate it with difficulty. Water and air move through it very slowly. Water runs off the surface at a slow rate, and the surface layer is wet for long periods in winter and spring. A seasonal high water table fluctuates between the surface and 2 feet below the surface during the months of December through April. The soil swells when wet and shrinks and cracks when dry. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most of the acreage is in crops and pasture. Soybeans are the principal crop. A small acreage is in woodland.

Suitable crops are sugarcane, soybeans, and rice. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, dallisgrass, ryegrass, tall fescue, small grain, alyce clover, and white clover.

This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content. A drainage system is needed for crops and pasture. Land grading or smoothing will improve surface drainage and permit more efficient use of farm equipment. Proper management of crop residue helps maintain the level of organic matter and reduce the soil loss caused by erosion. Irrigation is needed for rice. Most crops other than legumes respond well to nitrogen fertilizer. Lime or other fertilizers generally are not needed.

Wetness is a limitation of the soil for septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. A high shrink-swell potential is a limitation for use as foundations or as construction material. Capability subclass IIIw; woodland group 2w.

Sk—Sharkey clay, frequently flooded. This soil is on broad level areas adjacent to the Bayou Teche and Catahoula Coulee natural levees, and is outside the Atchafalaya Basin Floodway. It formed in clayey alluvium. Elevation is generally less than 10 feet above sea level. Slope is less than 0.5 percent. Although the west Atchafalaya Basin levee protects this soil from flooding by the Atchafalaya River, it is subject to frequent flooding by runoff from higher areas. This soil is associated with higher lying Sharkey soils that generally do not flood and with the more poorly drained Fausse soils at a lower elevation.

Included with this soil in mapping are small areas of Fausse soils. Also included are small areas of Sharkey soils that seldom flood, and spoil deposits from dug channels that cross the area.

Typically the surface layer is slightly acid, dark gray clay about 4 inches thick. The subsoil, which extends to a depth of 17 inches, is neutral dark gray clay mottled with yellowish brown. The next layer extends to a depth of 48 inches; it is mildly alkaline, gray clay mottled with yellowish brown. The underlying material is moderately alkaline gray clay mottled with yellowish brown.

This soil is high in natural fertility. Plant roots penetrate it with difficulty. Water and air move through it very slowly. Water runs off the surface at a slow rate, and the soil is flooded annually with 1 to 3 feet of water during one or more short or long periods in winter and spring. A seasonal high water table fluctuates between the surface and 2 feet below the surface during the months of December through April. The soil swells when wet and shrinks and cracks when dry. Sufficient water is available to plants in most years.

Most of the acreage is in woodland. Some areas have been developed for crawfish farming. The commonly occuring native trees are baldcypress, black willow, common persimmon, Drummond red maple, green ash, honeylocust, pumpkin ash, sugarberry, sweetgum, water hickory, waterlocust, and water oak. A list of native plants observed growing on this soil is in the section "Woodland Management and Productivity."

This soil is not suited to the production of most cultivated crops. Common bermudagrass and Pensacola

are suitable pasture plants. The hazard of stricts grazing time and limits the choice of ture plants.

and wetness are limitations for most uses. A swell potential is a limitation for use for foun- as construction material. Capability subclass nd group 3w.

g the Use and Management of s

urvey is a detailed analysis and evaluation of sic resource of the survey area—the soil. It is justing land use, including urbanization, to the and potentials of natural resources and to the t. Also, it can help avoid soil-related failures he land.

soil survey is in progress, soil scientists, con- s, engineers, and others keep extensive notes ature of the soils and about unique aspects of the soils in fields and at construction sites. s include data on erosion, drought damage to ps, yield estimates, flooding, the functioning of ems, and other factors affecting productivity, nd limitations under various uses and manage- is way, field experience and measured data on ties and performance are used as a basis for soil behavior.

ion in this section is useful in planning use and t of soils for crops and pasture, range, and many nonfarm uses, including building ways and other transportation systems, sanita- , parks and other recreation facilities, and wil- t. From the data presented, the potential of r specified land uses can be determined, soil to these land uses can be identified, and costly houses and other structures, caused by un- oil properties, can be avoided. A site where ies are favorable can be selected, or practices ercome the soil limitations can be planned.

and others using the soil survey can evaluate of specific land uses on the overall productivi- rvey area or other broad planning area and on ment. Productivity and the environment are ted to the nature of the soil. Plans should create a land use pattern in harmony with the .

rs can find information that is useful in locat- of roadfill and topsoil. Other information in- tness that causes difficulty in excavation. fficials, highway officials, engineers, and many alists also can find useful information in this . The safe disposal of wastes, for example, is ted to properties of the soil. Pavements, side- psites, playgrounds, lawns, and trees and influenced by the nature of the soil.

Crops and Pasture

General principles of soil management for crops and pasture are discussed in the following paragraphs. Specific recommendations cannot be given because management practices change as new information becomes available. Assistance in detailed planning can be obtained from the local representative of the Soil Conservation Service or from representatives of the Extension Service or the Louisiana Agricultural Experiment Station.

Fertilizing and liming. The soils of St. Martin Parish range from very strongly acid through moderately alkaline in the surface layer. Most soils that are used for crops are low in content of organic matter and in available nitrogen. Convent and Sharkey soils generally need only nitrogen fertilizers for nonleguminous crops. The Acy, Iberia, and Loreauville soils generally do not need lime, but they need phosphorus, potassium, and nitrogen for nonleguminous crops. The rest of the soils in the parish generally need a complete fertilizer for crops and pasture plants. Lime is also generally needed for pasture plants. The amount of fertilizer needed depends on the kind of crop to be grown, on past cropping history, on the level of yield desired, and on the kind of soil. It should be determined on the basis of soil test results. Information and instructions on collecting and testing soil samples can be obtained from local agricultural agencies (*3*).

Maintaining organic-matter content. Organic matter is an important source of nitrogen, and it also helps to increase the rate of water intake, reduce surface crusting, and improve tilth. Most soils of the parish that are used for crops are low in organic-matter content. The level of organic matter can be maintained by growing crops that produce an extensive root system and an abundance of foliage, by leaving plant residue on the surface, by growing perennial grasses and legumes in rotation with other crops, and by adding manure.

Tillage. Soils should be tilled only enough to prepare a seedbed and to control weeds. Excessive tillage destroys the structure of the soil. Fine-textured soils form clods when plowed at a certain moisture content. A compact layer or traffic pan forms in some soils under cultivation, but deep plowing, or chiseling, helps to break up this pan. On silty soils of the terrace uplands, subsoiling has not resulted in an increased yield of sugarcane (*12*). The soils can be protected from beating rains by leaving crop residue on the surface and using tillage implements to stir the surface of the soil. This residue helps to reduce surface crusting, slow runoff, increase infiltration, and control erosion.

Drainage and flood control. Most of the soils in the parish need surface drainage to make them more suitable for crops. The soils at higher elevations on the natural levees are drained by a gravity drainage system consisting of a series of mains, laterals, and split ditches. In other high areas of the parish the gravity drainage system consists of row drains, row arrangement, and field drains. The success of these systems depends on the

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Ratings of the hazard of erosion indicate the risk of ss of soil in well-managed woodland. The risk is *slight* if ıe expected soil loss is small; *moderate* if some measures e needed to control erosion during logging and road nstruction; and *severe* if intensive management or spe-al equipment and methods are needed to prevent exces-ve loss of soil.

Ratings of equipment limitation reflect the charac-ristics and conditions of the soil that restrict use of the uipment generally needed in woodland management or rvesting. A rating of *slight* indicates that use of equip-ent is not limited to a particular kind of equipment or me of year; *moderate* indicates a short seasonal limita-on or a need for some modification in management or uipment; *severe* indicates a seasonal limitation, a need r special equipment or management, or a hazard in the se of equipment.

Seedling mortality ratings indicate the degree that the il affects expected mortality of planted tree seedlings hen plant competition is not a limiting factor. Seedlings om good planting stock that are properly planted during period of sufficient rainfall are rated. A rating of *slight* dicates that the expected mortality of the planted edlings is less than 25 percent; *moderate*, 25 to 50 per-nt; and *severe*, more than 50 percent.

The potential productivity of merchantable trees on a il is expressed as a site index. This index is the average ight, in feet, that dominant and codominant trees of a ven species attain in a specified number of years. The te index applies to fully stocked, even-aged, unmanaged ands. For the merchantable hardwoods and softwoods in ıe parish, the site index is the height reached in 50 ars, except for cottonwood, for which the index is ight reached in 30 years.

Trees to plant are those that are suitable for commer-al wood production and that are suited to the soils.

ngineering

NATHAN J. SCHILLER, JR., engineer, Soil Conservation Service, sisted in preparing this section.

This section provides information about the use of soils r building sites, sanitary facilities, construction materi-s, and water management. Among those who can benefit om this section are engineers, landowners, community anners, town and city managers, land developers, buil-rs, contractors, and farmers and ranchers.

The ratings in the engineering tables are based on test ıta and estimated data in the "Soil Properties" section. ıe ratings were determined jointly by soil scientists and ıgineers of the Soil Conservation Service using known lationships between the soil properties and the behavior soils in various engineering uses.

Among the soil properties and site conditions identified the soil survey and used in determining the ratings in is section are grain-size distribution, liquid limit, asticity index, soil reaction, soil wetness, depth to a asonal water table, slope, likelihood of flooding, natural

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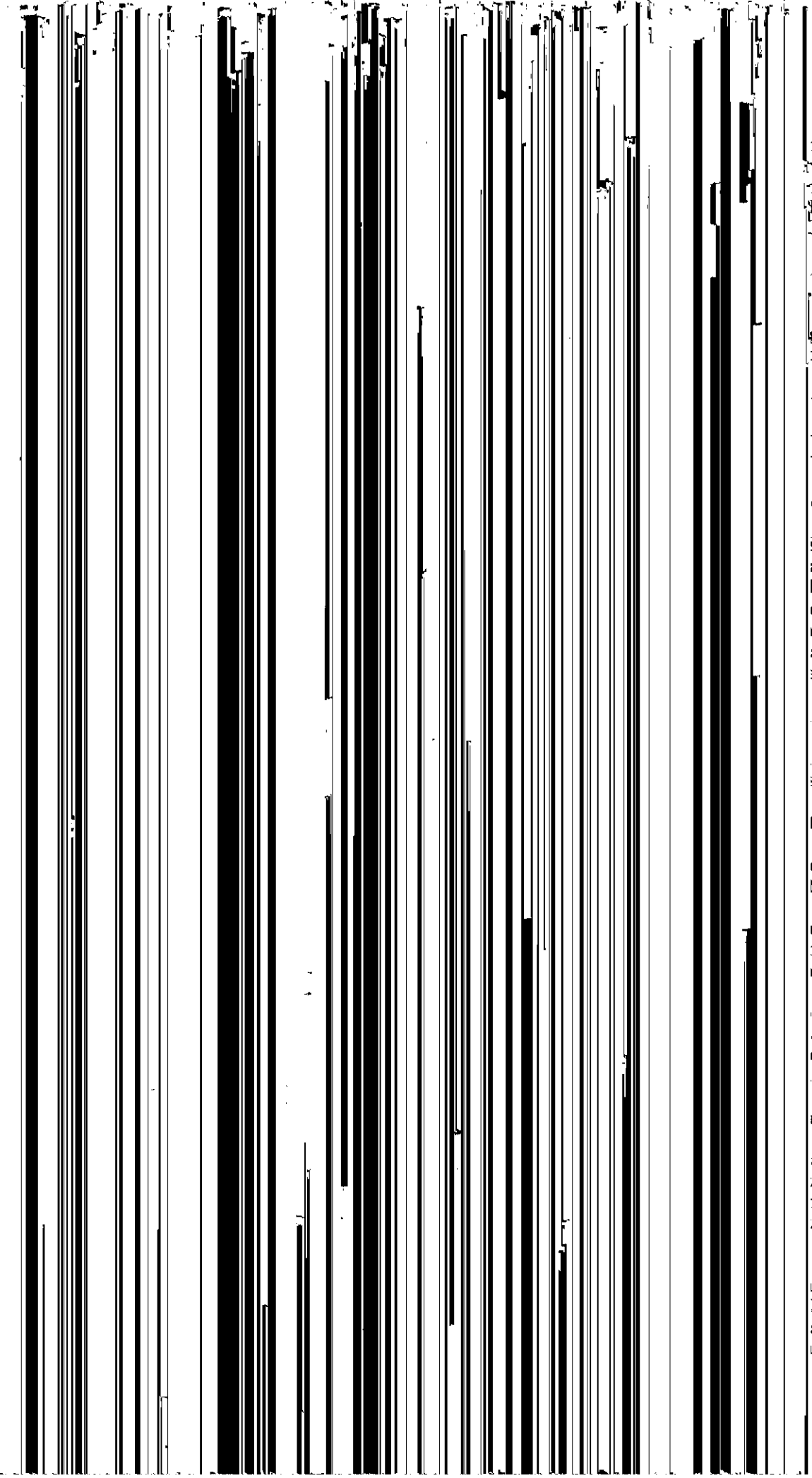

feet. Impervious soil for the required to minimize seepage nd water. Soils that very are those that have stones and Unless the soil has very slow of ground water is a hazard ter table is above the level of where the water table is ground water into the lagoon goon's capacity for decompos- h to bedrock, and susceptibili- the suitability of sites for cost of construction. Shear of compacted soils affect the ts.

nethod of disposing of solid trenches or on the surface of ead in compacted layers and soil. Landfill areas are subject ease of excavation, risk of pol- afficability affect the suitabili- he best soils have a loamy or e or slow permeability, have a re not subject to flooding. In ater table is high, water seeps s problems in excavating and seepage into the refuse in- of ground water. Clayey soils difficult to spread. Sandy or ave rapid permeability that s to contaminate local ground

the limitations in table 7 apply a depth of about 6 feet. If the on of slight or moderate may tion is needed before a site is

ry landfill, refuse is placed on cessive layers. The limitations t apply to this type of landfill. be a limitation because of the ment.

landfills should be soil that is d over the compacted fill dur- ther. Soils that are loamy or r soils. Clayey soils may be d; sandy soils may be subject

al cover of landfills should be s. In comparison with other nost soils has the best worka- ter, and the best potential for ither the area- or trench-type from the A horizon for use as l cover is desirable.

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r and spring when they are flooded (fig. 9).
ɔcessing facilities are numerous throughout
The town of Breaux Bridge is commonly
crawfish capital of the world.
tly affect the kind and amount of vegetation
ble to wildlife as food and cover, and they af-
struction of water impoundments. The kind
ce of wildlife that populate an area depend
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ny one of these elements is missing, in-
inaccessible, wildlife will either be scarce or
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s have the potential, wildlife habitat can be
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managing the existing plant cover, and by
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lants on selected soils in wetlands are listed

2 the soils in the survey area are rated ac-
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g the use of parks, wildlife refuges, nature
and other developments for wildlife.
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aining specific elements of wildlife habitat.
ining the intensity of management needed for
t of the habitat.
ining which areas are suitable to aquire for
agement.
ıtial of the soil is rated good, fair, poor, or
A rating of *good* means that the element of
itat or the kind of habitat is easily created,
r maintained. Few or no limitations affect
, and satisfactory results can be expected if
sed for the designated purpose. A rating of
hat the element of wildlife habitat or kind of
be created, improved, or maintained in most
erate intensity of management and fairly
ention are required for satisfactory results. A
or means that limitations are severe for the
element or kind of wildlife habitat. Habitat
ted, improved, or maintained in most places,
nent is difficult and requires intensive effort.
very poor means that restrictions for the ele-
ldlife habitat or kind of wildlife are very
that unsatisfactory results can be expected.
ɔitat is impractical or even impossible to
ɔve, or maintain on soils having such a rating.
nts of wildlife habitat are briefly described in
paragraphs.
l seed crops are seed-producing annuals used
Examples are corn, grain sorghum, wheat,
cowpeas, soybeans, and sunflowers. The main
es that affect the growth of grain and seed
pth of the root zone, texture of the surface
ble water capacity, wetness, slope, and flood
temperature and soil moisture are also impor-

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Examples are fescue, ryegrass, rescuegrass, clover, and vetch. The main soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, flood hazard, and slope. Soil temperature and soil moisture are also important.

Wild herbaceous plants are native or naturally established herbaceous grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestem, beggarweed, partridgepea, and fescue. The main soil properties 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 important.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Examples of native plants are oak, cherry, sweetgum, wildplum, hawthorn, persimmon, sassafras, sumac, pecan, blackberry, grape, and dewberry. Examples of fruit-producing shrubs that are commercially available and suitable for planting on soils rated good are shrub lespedeza, autumn-olive, and crabapple. The main soil properties that affect growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover plants that furnish habitat or supply food in the form of browse, seeds, or fruitlike cones. Examples are pine and cedar. Soil properties that have a major effect on the growth of coniferous plants are depth of the root zone, available water capacity, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites, exclusive of submerged or floating aquatics. They produce food or cover for wildlife that use wetland as habitat. Examples of wetland plants are smartweed, wild millet, rushes, sedges, reeds, wildrice, and cattail. The main soil properties affecting wetland plants are texture of the surface layer, wetness, reaction, slope, and surface stoniness.

Shallow water areas are bodies of surface water that have an average depth of less than 5 feet and are useful to wildlife. They can be naturally wet areas, or they can be created by dams or levees or by water-control devices in marshes or streams. Examples are muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds. The main soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. The availability of a dependable water supply is important if water areas are to be developed.

The kinds of wildlife are briefly described in the following paragraphs.

Openland wildlife includes birds and mammals that use areas of croplands, pastures, and meadows and areas of grasses, herbs, shrubs, and vines. These areas produce

grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to this habitat include bobwhite quail, dove, meadowlark, field sparrow, killdeer, cottontail rabbit, red fox, and robins.

Woodland wildlife includes birds and mammals that use areas of hardwoods or conifers or a mixture of both and associated grasses, legumes, and wild herbaceous plants. Examples of wildlife attracted to this habitat are wild turkey, wood duck, woodcock, thrushes, vireos, woodpeckers, tree squirrels, grey fox, raccoon, deer, swamp rabbit, and black bear.

Wetland wildlife includes birds and mammals that use open, marshy, or swampy shallow-water areas. Examples of wildlife attracted to this habitat are ducks, geese, herons, shore birds, rails, kingfishers, muskrat, mink, and nutria.

Soil Properties

Extensive data on soil properties collected during the soil survey are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of selected samples of soil profiles.

When he makes soil borings during field mapping, the soil scientist can identify several important soil properties. He notes the seasonal soil moisture condition, or the presence of free water and its depth in the profile. For each horizon, he notes the thickness of the soil and its color; the texture, or the amount of clay, silt, and sand; the structure, or natural pattern of cracks and pores in the undisturbed soil; and the consistence of soil in-place under the existing soil moisture conditions. He records the root depth of existing plants, determines soil pH or reaction, and identifies any free carbonates.

Samples of soil material are analyzed in the laboratory to verify the field estimates of soil properties and to determine all major properties of key soils, especially properties that cannot be estimated accurately by field observation. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for many of the series are available from nearby counties.

The available field and laboratory data are summarized in tables in this section. The tables give the estimated range of engineering properties, the engineering classification, and the physical and chemical properties of each major horizon of each soil in the survey area. They also present pertinent soil and water features, engineering test data, and data obtained from both physical and chemical laboratory analyses of soils.

Engineering Properties

Table 13 gives estimates of engineering properties and classifications for the major horizons of each soil in the survey area. These estimates are the ranges in value that are most likely in areas where the soil is mapped.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 13 gives information for each of these contrasting horizons in a typical profile. Depth to the upper and lower boundaries of each horizon is indicated. More information about the range of properties in each horizon is given for each soil series in the section "Soil Series and Morphology."

Texture is described in table 13 in the standard terms used by the United States Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If a soil contains gravel or other particles coarser than sand, an appropriate modifier is added, for example, "gravelly loam." Other texture terms are defined in the Glossary.

The two systems commonly used in classifying soils for engineering use are the Unified Soil Classification System and the classification system of the American Association of State Highway and Transportation Officials (AASHTO). In table 13 soils in the survey area are classified according to both systems.

The Unified system (*2*) 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, plasticity index, liquid limit, and organic-matter content. Soils are grouped into 15 classes—eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt.

The AASHTO system (*1*) classifies soils according to those properties that affect their use in highway construction and maintenance. In this system a mineral soil is classified in one of seven basic groups ranging 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. At the other extreme, in group A-7, are fine-grained soils. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Liquid limit and plasticity index indicate the effect of water on the strength and consistence of soil. These indexes are used in both the Unified and the AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior.

Range in liquid limit and plasticity index are estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.

Physical and Chemical Properties

Table 14 shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major

poorly drained and
ıy loess deposits.
on the terrace
estern part of the

mall acreage is in

in a pasture 3.25
feet east of State
alt road, Spanish

2) silt loam; few fine
e fine granular struc-
clear smooth bounda-

loam; common medi-
es; massive; firm; few
concretions; strongly

loam; common medi-
les; moderate medium
medium subangular
thick continuous clay
mmon medium black
terial that are 1 to 1.5
es; very strongly acid;

am; common medium
and yellowish brown
matic structure that
; firm; few fine roots;
rface of peds and in
retions; very strongly

6/2) silt loam; many
4/4) and few medium
massive; friable; few
ghtly acid.

rown, or gray and is 3
d.
t brownish gray. It is
terial extend into the

silty clay loam or silt
B3 horizon is gray or
ghtly acid.
Memphis, and Patout-
er colored in the sub-

somewhat poorly
formed in loamy
lake fill and on
dway part of the

d is used for wil-
laya Floodway. A

n an area of Con-
ortheast of Butte
junction of Little

nedium dark brown brit-
dary.

h brown, or dark brown
ly acid.
rk yellowish brown silty
of brown or gray. It is
irt of the B & A horizon
gray.
ish brown. It is strongly

, Frost, Acy, Patoutville,
than Calhoun and Frost
Acy soils. They lack red
atoutville soils. They are

e somewhat poorly
eable. They formed
These soils are on
ee natural levees on
of the parish.
mall acreage is used

im 3.5 miles east of
e Highway 737, 200
Spanish Land Grant

4/2) silt loam; weak fine
roots; few fine black and
nooth boundary.
)YR 4/2) silty clay loam;
n (10YR 5/8) mottles;
arts to moderate medium
s between peds; common
irface of peds; few medi-
ial wavy boundary.
5/2) silty clay loam; com-
R 5/8) and common medi-
s; weak coarse prismatic
subangular blocky; firm;
ne pores; thin continuous
; abrupt wavy boundary.
lay; common fine distinct
ery firm; few fine pores;
l.

h brown, or brown and is
m acid.
id.
ay, or grayish brown silt
acid through neutral.
ion, Loreauville, Baldwin,
ned than the Gallion soils
pical of Loreauville soils.
e better drained than the

very poorly drained
ned in clayey Missis-
ur mostly in swamp
e alluvial plain.
l. A small acreage is

pcky structure; friable; many fine pores; com-
ions; slightly acid.

grayish brown or dark gray and is 5 to 6
ngly acid through medium acid.
19 inches thick. It extends 9 to 16 inches into
hat are 1 to 4 inches wide. It is very strongly

dark gray, or light brownish gray. It is very
um acid.
y acid or neutral.
sociated with Acy, Coteau, Patoutville, and
ore poorly drained than the associated soils.

Gallion series are well drained and
e. They formed in loamy Red River
are parallel and adjacent to Bayou
er, Bayou Vermilion, and Catahoula
al plain in the western part of the

e is in homesites and other nonfarm
is in crops and pasture.
allion silt loam in an area of Gallion-
ly undulating, 2 miles south of Ar-
outhwest of State Highway 347, 700
you Teche, 42 feet north of turnrow,
Section 105, T. 8 S., R. 5 E.

own (10YR 4/3) silt loam; weak fine granular
ıy fine roots; slightly acid; abrupt wavy boun-

ish brown (5YR 4/4) silty clay loam; moderate
ıcture that parts to weak medium subangular
roots between peds; few fine pores; thick con-
brown clay films on surface of peds and in
gs on surface of prisms; slightly acid; gradual

ldish brown (5YR 4/4) silty clay loam; many
brown (7.5YR 4/4) mottles; weak coarse
irm; few fine roots; common fine pores; thick
on surface of peds and in pores; common fine
tral; abrupt wavy boundary.
ied dark brown (7.5YR 4/4) silt loam and silty
ılaty structure; firm; common medium calcium
moderately alkaline.

or dark grayish brown and is 4 to 8 inches
rough neutral.
ish brown, brown, or yellowish red silty clay
ıtly acid through neutral.
same color range as the B2 horizon. It is
ilt loam, or very fine sandy loam. This horizon
derately alkaline. Some subhorizons have 1 to
ıte concretions.
ssociated with Dundee, Baldwin, and Perry
ned and redder in color than the Baldwin and
etter drained and have a lower clay content
ils.

beria series are poorly drained and
le. They formed in clayey Mississippi
e soils are on the Bayou Teche natu-
alluvial plain in the western part of

rk gray, black, or very dark grayish brown
is slightly acid to neutral.
h brown or olive gray. It is neutral through

r silt loam. It is grayish brown to olive gray.
rately alkaline.
live gray, light olive gray, or grayish brown

associated with the Dundee, Baldwin, and
rker colored surface layer than Dundee soils.
have a lower clay content than Baldwin and

mphis series are well drained and
e. They formed in loamy loess
are on the terrace uplands in the
hwestern parts of the parish.
is in crops and pasture.
mphis silt loam in an area of Mem-
gently undulating, 1.5 miles
6 mile southwest of State Highway
fence, NW1/4SE1/4 sec. 11, T. 11 S.,

own (10YR 4/3) silt loam; moderate medium
iable; many fine roots; strongly acid; clear

brown (7.5YR 4/4) silty clay loam; moderate
cky structure; firm; common fine roots; com-
continuous clay films on surface of peds and
acid; gradual wavy boundary.
brown (7.5YR 4/4) silty clay loam; moderate
cky structure; firm; few fine roots; few fine
clay films on surface of peds and in pores;
s on vertical surface of peds; very strongly
ndary.
yellowish brown (10YR 4/4) silt loam; weak
ocky structure; friable; few fine pores; thin
orizontal surface of peds and in pores; thin
n vertical surface of peds; medium acid;
.

dark brown, or dark yellowish brown and is 3
strongly acid through medium acid.
yellowish brown or dark brown. It is very
id.
yellowish brown or yellowish brown. It is
id.
associated with Frost, Calhoun, Coteau, and
better drained and lack the mottling of the

toutville series are somewhat poorly
permeable. They formed in loamy
soils are on the terrace uplands in
of the parish.
e is in crops. A small acreage is in

f Patoutville silt loam in a field 2
900 feet west of State Highway 182,
ow, Spanish Land Grant Section 28,

lish brown. It is slightiy acid through

brown. It is clay or silty clay and is neutral

ciated with Gallion soils. They are more
her clay content than Gallion soils.

key series are poorly drained and
They formed in clayey Mississippi
soils are on the alluvial plain ad-
che and Catahoula Coulee natural
art of the parish.
is in crops and woodland. A small

arkey clay, 4.5 miles east of Ar-
itheast of State Highway 737, 0.45
l, 800 feet west of drain, Spanish
T. 7 S., R. 6 E.

y (10YR 4/1) clay; weak coarse subangular
nany fine roots along surfaces of peds; few
own soft bodies; slightly acid; clear wavy

ray (10YR 4/1) clay; common fine distinct
ottles; moderate medium subangular blocky
roots along surface of peds; few fine pores;
es; slightly acid; gradual wavy boundary.
ray (N 4/0) clay; few medium distinct olive
les; moderate medium subangular blocky
roots along surface of peds; few fine pores;
dies; few shiny ped faces; moderately al-
undary.
5Y 5/1) clay; common medium distinct light
ottles; moderate medium subangular blocky
oderate fine angular blocky; firm; few fine
lickensides that do not intersect; moderate-
boundary.
(10YR 5/1) silty clay loam; common medium
n (10YR 5/6) mottles; massive; friable;

ay, very dark gray, or very dark grayish
9 inches thick. It is slightly acid through

ray, gray, or olive gray. It is slightly acid

clay, silty clay loam, or silt loam, and it has
the B2 horizon. It is mildly alkaline or

ociated with Dundee, Baldwin, Iberia, and
ave a higher clay content than Dundee or
inner very dark surface layers than Iberia
per than Fausse soils.

classification currently used was
l Cooperative Soil Survey in 1965.
further details about the system
st literature available (*13*).
lassification has six categories.
oadest, these categories are order,
subgroup, family, and series. In
for classification are the different

soil properties that can be observed in the field or those that can be inferred either from other properties that are observed or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 15 the soils of the survey area are classified according to the system. Classes of the system are briefly discussed in the following paragraphs.

ORDER. Ten soil orders are recognized. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders based primarily on properties that influence soil genesis and that are important to plant growth or that were selected to reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of expression of pedogenic horizons; soil moisture and temperature regimes; and base status. The name of a great group ends with the name of a suborder. A prefix added to the name suggests something about the properties of the soil. An example is Haplaquents (*Hapl*, meaning simple horizons, plus *aquent*, the suborder of Entisols that have an aquic moisture regime).

SUBGROUP. Each great group is divided into three subgroups: the central (typic) concept of the great groups, which is not necessarily the most extensive subgroup; the intergrades, or transitional forms to other orders, suborders, or great groups; and the extragrades that have some properties that are representative of the great groups but do not indicate transitions to any other known kind of soil. The names of subgroups are derived by placing one or more adjectives before the name of the great group. The adjective *Typic* is used for the subgroup that is thought to typify the great group. An example is Typic Haplaquents.

FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is fine-loamy, mixed, nonacid, mesic, Typic Haplaquents.

SERIES. The series consists of a group of soils that are formed from a particular kind of parent material and have horizons that, except for texture of the surface soil, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineralogical and chemical composition.

Formation of the Soils

This section discusses the factors of soil formation and how these factors have affected the soils in St. Martin Parish.

Soil is the product of the interaction of climate, living organisms (especially vegetation), parent material, and relief over a period of time. Each of these factors modifies the effect of the other four. Significant differences in one of the factors result in differences in soil characteristics.

Climate and vegetation are the active forces in soil formation. Relief, mainly by its influence on drainage, modifies the effects of time, climate, and living organisms. The parent material also affects the kind of profile that can be formed and, in extreme cases, determines it almost entirely. Finally, time is needed for the other factors to change parent material into soil.

Climate

St. Martin Parish has a subtropical humid climate, which is characteristic of areas near the Gulf of Mexico. The warm moist climate has promoted rapid soil development. Climate is uniform throughout the parish, although its effect is slightly modified by local relief. The minor climatic differences within the parish are not considered significant enough to create soil differences. Detailed information about climate is given in the section "Introduction."

Living Organisms

Living organisms, including plants, bacteria, fungi, and animals are important in the formation of soils. Among the chemical and physical changes they cause are gains in content of organic matter and nitrogen, gains or losses in content of plant nutrients, and changes in structure and porosity. Plant roots force openings into the soil and modify porosity. As they grow, they break up and rearrange the soil particles. Plants transfer nutrients from the subsoil to the surface layers and, when they die, supply humus to the soils. Bacteria decompose organic matter and help to improve the physical condition of the soil. Animals such as crawfish and earthworms also influence soil formation by mixing the soil. When animals die, they form humus, which is a source of nutrients.

Man's activities such as cultivation, fertilization, channel construction, harvesting, burning, draining, diking, and land grading and smoothing affect the living organisms of the soil.

Most soils of the parish formed under forest vegetation. Grass vegetation affected the formation of some soils. The black surface layer of Iberia and Loreauville soils is attributed to grass vegetation.

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t of the B horizon.
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of silty clay loam.
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B horizon to form.
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tical axis of aggregates longer than
as with rounded tops), *blocky* (angular
r. *Structureless* soils are either *single*
as in dune sand) or *massive* (the parti-
gular cleavage, as in many hardpans).
on; roughly, the part of the solum below

normal plow depth, ordinarily to shatter

dge, constructed across sloping soils on
ngle to the contour. The terrace inter-
it can soak into the soil or flow slowly
harm. A terrace in a field is generally
farmed. A terrace intended mainly for
that is maintained in permanent sod.
rial plain, ordinarily flat or undulating,
the sea. A stream terrace is frequently
ntrast with a flood plain, and is seldom
narine terrace, generally wide, was

rtions of sand, silt, and clay particles in
tural classes, in order of increasing pro-
sand, loamy sand, sandy loam, loam,
oam, clay loam, silty clay loam, sandy
The sand, loamy sand, and sandy loam
ded by specifying "coarse," "fine," or "

soil, especially the soil structure, as re-
s. Good tilth refers to the friable state
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nd above the lowlands along streams.

ILLUSTRATIONS

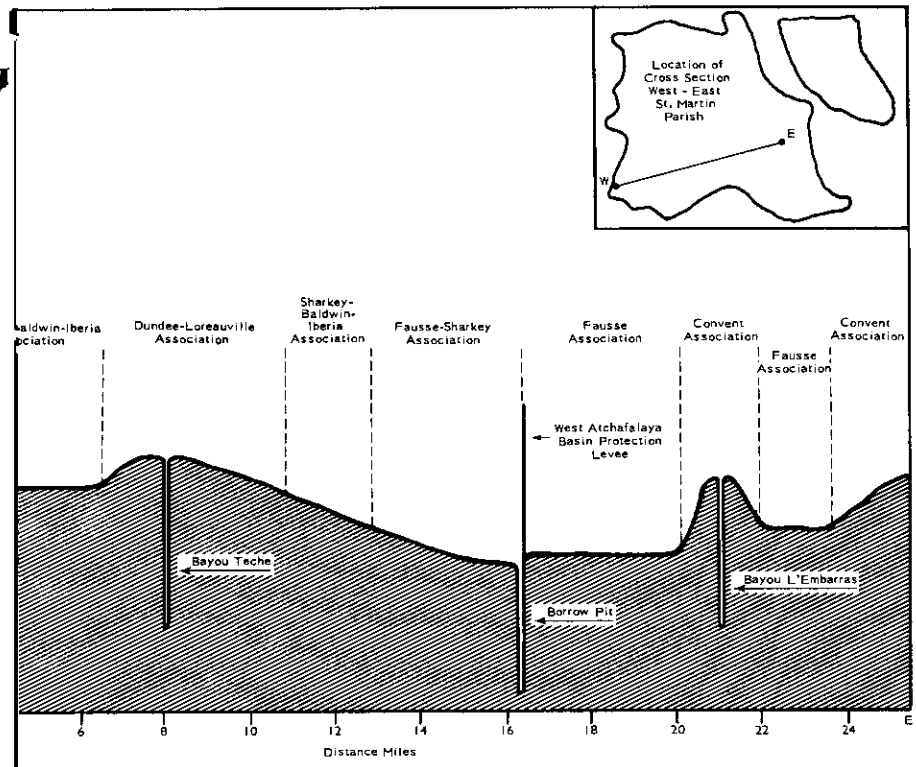

Figure 3.—Relationship of soil associations to elevation.

TABLES

ATION

lo weather station in St. Martin Parish]

Precipitation			
ar in 10 will have-		Average days with snow cover 1.0 inch or more	Average depth of snow on days with snow cover
than--	More than--		
In	In		In
.08	9.45	(1)	2
.23	6.90	(1)	2
.44	7.06	0	0
.87	8.48	0	0
.38	8.24	0	0
.30	10.72	0	0
.25	10.69	0	0
.96	7.95	0	0
.54	8.47	0	0
.72	7.08	0	0
.33	7.90	0	0
.88	8.62	0	0
.92	69.95	(1)	(1)

TABLE 2.--PROBABILITY OF LAST FREEZING TEMPERATURES IN SPRING AND FIRST IN FALL

[Data recorded at Lafayette, La. No weather station in St. Martin Parish]

Probability	Dates for given probability and temperature				
	24° F	28° F	32° F	36° F[1]	40° F[1]
Spring:					
1 year in 10 later than---	Feb. 14	Mar. 8	Mar. 20	Apr. 10	Apr. 20
2 years in 10 later than---	Feb. 14	Feb. 27	Mar. 12	Apr. 2	Apr. 12
5 years in 10 later than---	Jan. 13	Feb. 12	Feb. 26	Mar. 19	Mar. 28
Fall:					
1 year in 10 earlier than-	Dec. 4	Nov. 23	Nov. 7	Oct. 26	Oct. 14
2 years in 10 earlier than-	Dec. 19	Dec. 1	Nov. 13	Nov. 1	Oct. 20
5 years in 10 earlier than-	(2)	Dec. 17	Nov. 27	Nov. 12	Oct. 31

[1]Frost can form on vegetation, under a clear sky and in calm air at night, when the temperature registered on a thermometer 5 feet above ground in a shelter is above 32°. For this reason, and because low temperatures - even those above freezing - can adversely affect vegetation or seeds in beds, probabilities for 36° and 40° temperature threshholds are included in the table. These data are based on 30 years of record from 1921 to 1950. The data have been adjusted, where necessary, to account for years without temperature as low as the indicated threshhold.

[2]Occurs less frequently than 5 years in 10.

TABLE 3.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Ac	Acy silt loam	1,207	0.2
Ba	Baldwin silty clay loam	32,406	6.7
Ca	Calhoun silt loam	274	0.1
CB	Convent association, occasionally flooded	19,258	4.0
CH	Convent-Hydraquents association	17,493	3.6
CO	Convent soils, frequently flooded	51,731	10.7
Cu	Coteau silt loam	743	0.2
Cx	Coteau-Frost complex, gently undulating	2,161	0.4
Dd	Dundee silt loam	25,847	5.3
De	Dundee-Sharkey complex, gently undulating	6,318	1.3
FA	Fausse association	26,241	5.4
FS	Fausse soils	172,941	35.8
Ft	Frost silt loam, occasionally flooded	379	0.1
Ga	Gallion silt loam	787	0.2
Gp	Gallion-Perry complex, gently undulating	6,709	1.4
Ib	Iberia silty clay	23,881	4.9
Lo	Loreauville silt loam	22,519	4.7
Me	Memphis silt loam, 1 to 3 percent slopes	715	0.1
Mh	Memphis silt loam, 5 to 8 percent slopes	1,996	0.4
Mp	Memphis-Frost complex, gently undulating	3,869	0.8
Pt	Patoutville silt loam	928	0.2
Sh	Sharkey clay	33,215	6.9
Sk	Sharkey clay, frequently flooded	23,949	5.0
	Small water areas	7,737	1.6
	Total land area [1]	483,304	100.0
	Large water areas	38,921	
	Total area	522,225	

[1] From Louisiana Conservation Needs Inventory - 1969.

TABLE 4.--YIELDS PER ACRE OF CROPS AND PASTURE PLANTS

[All yields were estimated for a high level of management in 1973. Absence of a yield figure indicates the crop is seldom grown or is not suited to the soil]

Soil name and map symbol	Cotton lint	Rice	Sugarcane	Soybeans	Sweet potatoes	Corn	Common bermudagrass
	Lb	Bu	Ton	Bu	Bu	Bu	AUM[1]
Acy: Ac	650	105	30	35	---	---	7.0
Baldwin: Ba	600	120	30	33	---	---	7.0
Calhoun: Ca	400	110	25	25	225	---	5.5
Convent: CB	---	---	---	25	---	---	7.5
2CH: Convent part	---	---	---	---	---	---	---
Hydraquents part	---	---	---	---	---	---	---
CO	---	---	---	---	---	---	6.5
Coteau: Cu	500	110	28	30	250	60	6.0
2Cx: Coteau part	450	---	27	30	225	---	6.5
Frost part	400	---	25	25	200	---	5.5
Dundee: Dd	700	---	32	37	---	80	6.5
2De: Dundee part	625	---	30	35	---	---	6.5
Sharkey part	525	---	26	35	---	---	6.5
Fausse: FA, FS	---	---	---	---	---	---	---
Frost: Ft	---	---	---	25	---	---	5.5
Gallion: Ga	750	---	30	37	---	80	7.0
2Gp: Gallion part	650	---	28	35	---	---	7.0
Perry part	475	---	23	28	---	---	6.0
Iberia: Ib	---	120	26	37	---	---	6.5
Loreauville: Lo	800	110	32	40	---	85	7.5
Memphis: Me	675	---	30	35	275	80	7.0
Mh	---	---	25	30	---	---	7.0
2Mp: Memphis part	---	---	28	30	---	---	7.0
Frost part	---	---	25	25	---	---	5.5

See footnotes at end of table.

TABLE 4.--YIELDS PER ACRE OF CROPS AND PASTURE PLANTS--Continued

Soil name and map symbol	Cotton lint	Rice	Sugarcane	Soybeans	Sweet potatoes	Corn	Common bermudagrass
	Lb	Bu	Ton	Bu	Bu	Bu	AUM[1]
Patoutville:							
Pt	550	110	27	30	250	---	6.0
Sharkey:							
Sh	---	120	28	37	---	---	6.5
Sk	---	---	---	---	---	---	5.0

[1]Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for a period of 30 days.

[2]This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

try in

od.

AGEMENT AND PRODUCTIVITY—Continued

s	Potential productivity		
ling al- y	Important trees	Site index	Trees to plant
ht	Cherrybark oak	105	American sycamore, eastern cottonwood.
	Eastern cottonwood	100	
	Sweetgum	100	
	Water oak	95	
rate	Green ash	85	Eastern cottonwood, American sycamore.
	Eastern cottonwood	100	
	Cherrybark oak	90	
	Sweetgum	90	
	Water oak	---	
	Pecan	---	
	Black willow	---	
	Pumpkin ash	---	
re	Green ash	70	
	Baldcypress	---	
	Water hickory	---	
	Water tupelo	---	
	Sugarberry	---	
rate	Cherrybark oak	---	Loblolly pine, slash pine.
	Water oak	---	
	Loblolly pine	90	
	Slash pine	90	
	Sweetgum	---	
ht	Green ash	80	Eastern cottonwood, American sycamore.
	Cherrybark oak	95	
	Sweetgum	83	
	Water oak	---	
	Pecan	---	
	American sycamore	---	
	Eastern cottonwood	100	
ht	Green ash	80	Eastern cottonwood, American sycamore.
	Cherrybark oak	95	
	Sweetgum	83	
	Water oak	---	
	Pecan	---	
	American sycamore	---	
	Eastern cottonwood	100	
rate	Cherrybark oak	---	Eastern cottonwood.
	Eastern cottonwood	90	
	Green ash	72	
	Sweetgum	92	
	Water oak	---	
	Pecan	---	
	Water hickory	---	
re	Green ash	80	Eastern cottonwood.
	Eastern cottonwood	95	
	Sweetgum	90	

TABLE 5.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Suitability group	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Important trees	Site index	
Loreauville:							
Lo	1w	Slight	Moderate	Slight	Green ash	80	Eastern cottonwood, American sycamore.
					Eastern cottonwood	120	
					Water oak	---	
					Pecan	---	
					American sycamore	---	
					Cherrybark oak	90	
Memphis:							
Me, Mh	1o	Slight	Slight	Slight	Cherrybark oak	100	Loblolly pine, slash pine.
					Loblolly pine	105	
					Sweetgum	90	
					Water oak	90	
					Slash pine	105	
[1]Mp:							
Memphis part	1o	Slight	Slight	Slight	Cherrybark oak	100	Loblolly pine, slash pine.
					Loblolly pine	105	
					Sweetgum	90	
					Water oak	90	
					Slash pine	105	
Frost part	2w	Slight	Severe	Moderate	Cherrybark oak	---	Loblolly pine, slash pine.
					Water oak	---	
					Loblolly pine	90	
					Sweetgum	---	
					Slash pine	90	
Patoutville:							
Pt	1w	Slight	Moderate	Slight	Loblolly pine	99	Loblolly pine, slash pine.
					Sweetgum	86	
					Water oak	---	
					Cherrybark oak	93	
					Slash pine	99	
Sharkey:							
Sh	2w	Slight	Severe	Moderate	Green ash	85	Eastern cottonwood, American sycamore, sweetgum.
					Eastern cottonwood	100	
					Cherrybark oak	90	
					Sweetgum	90	
					Water oak	---	
					Pecan	---	
					American sycamore	---	
Sk	3w	Slight	Severe	Severe	Green ash	70	Eastern cottonwood, American sycamore.
					Sweetgum	80	
					Water oak	80	
					Water hickory	---	
					Sugarberry	---	
					Pumpkin ash	---	
					Black willow	---	

[1]This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

TABLE 6.--BUILDING SITE DEVELOPMENT

[See text for definitions of "slight," "moderate," and "severe"]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets
Acy:				
Ac	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.
Baldwin:				
Ba	Severe: wetness, too clayey.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
Calhoun:				
Ca	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Convent:				
CB, CO	Severe: floods, wetness.	Very severe: floods.	Severe: floods.	Severe: floods.
[1]CH:				
Convent part	Severe: floods, wetness.	Very severe: floods.	Severe: floods.	Severe: floods.
Hydraquents part	Severe: floods, wetness, cutbanks cave.	Very severe: floods, wetness, low strength.	Severe: floods, wetness, low strength.	Severe: floods, wetness, low strength.
Coteau:				
Cu	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.
[1]Cx:				
Coteau part	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.
Frost part	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
Dundee:				
Dd	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.
[1]De:				
Dundee part	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.
Sharkey part	Severe: wetness, too clayey.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.

See footnotes at end of table.

SITE DEVELOPMENT—Continued

lings hout ments	Small commercial buildings	Local roads and streets
e: ell.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.
e:	Severe: floods, wetness.	Severe: wetness, low strength.
gth, ell.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.
gth, ell.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.
well, gth.	Severe: wetness, shrink-swell, low strength.	Severe: wetness, shrink-swell, low strength.
gth, well.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, shrink-swell, low strength.
well, ngth.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.
ngth.	Moderate: low strength.	Moderate: low strength.
ngth.	Moderate: low strength, slope.	Moderate: low strength.
ngth.	Moderate: low strength.	Moderate: low strength.
	Severe: wetness.	Severe: wetness, low strength.
ngth, well.	Moderate: wetness, low strength, shrink-swell.	Severe: low strength.
ngth, well.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
re: well.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.

inds of soil. See mapping unit description for the

TABLE 7.--SANITARY FACILITIES

[See text for definitions of "slight," "moderate," "good," "fair," and other terms used to rate soils]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Acy:					
Ac	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
Baldwin:					
Ba	Severe: wetness, percs slowly.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: too clayey, wetness.
Calhoun:					
Ca	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Convent:					
CB, CO	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
[1]CH:					
Convent part	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
Hydraquents part	Severe: floods, percs slowly, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
Coteau:					
Cu	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
[1]Cx:					
Coteau part	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
Frost part	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Dundee:					
Dd	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
[1]De:					
Dundee part	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
Sharkey part	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, wetness.
Fausse:					
FA, FS	Severe: floods, percs slowly, wetness.	Severe: floods.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey, wetness.

See footnotes at end of table.

Area sanitary landfill	Daily cover for landfill
/ere: etness, loods.	Poor: wetness.
ight----------	Fair: too clayey.
ight----------	Fair: too clayey.
vere: etness.	Poor: wetness, too clayey.
vere: etness.	Poor: wetness, too clayey.
vere: etness.	Fair: too clayey.
ight----------	Fair: too clayey.
ight----------	Fair: too clayey.
evere: vetness.	Poor: wetness.
evere: vetness.	Fair: too clayey.
evere: vetness.	Poor: too clayey, wetness.
evere: floods, wetness.	Poor: too clayey, wetness.

unit description for the

TABLE 8.--CONSTRUCTION MATERIALS

xt for definitions of "good," "fair," "poor," and "unsuited]

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

table.

TABLE 8.—CONSTRUCTION MATERIALS—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Frost:				
Ft	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
Gallion:				
Ga	Fair: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
[1]Gp:				
Gallion part	Fair: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
Perry part	Poor: wetness, low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness, too clayey.
Iberia:				
Ib	Poor: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: too clayey, wetness.
Loreauville:				
Lo	Poor: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
Memphis:				
Me, Mh	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
[1]Mp:				
Memphis part	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
Frost part	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
Patoutville:				
Pt	Poor: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
Sharkey:				
Sh, Sk	Poor: too clayey, shrink-swell, wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness, too clayey.

[1]This mapping unit is made up of two dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

TABLE 9.--WATER MANAGEMENT

[See text for definitions of "slight," "moderate," and "severe"]

Soil name and map symbol	Limitations for--		Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Terraces and diversions	Grassed waterways
Acy: Ac	Moderate: seepage.	Slight	Favorable	Not needed	Favorable.
Baldwin: Ba	Slight	Moderate: shrink-swell, low strength, compressible.	Percs slowly	Not needed	Wetness.
Calhoun: Ca	Slight	Moderate: piping, erodes easily, low strength.	Percs slowly, cutbanks cave.	Not needed	Wetness.
Convent: CB, CO	Moderate: seepage.	Moderate: erodes easily, piping, low strength.	Floods, cutbanks cave.	Not needed	Erodes easily.
[1]CH: Convent part	Moderate: seepage.	Moderate: erodes easily, piping, low strength.	Floods, cutbanks cave.	Not needed	Erodes easily.
Hydraquents part	Moderate: seepage.	Slight	Floods	Not needed	Not needed.
Coteau: Cu	Slight	Slight	Favorable	Not needed	Favorable.
[1]Cx: Coteau part	Slight	Slight	Favorable	Not needed	Favorable.
Frost part	Slight	Slight	Percs slowly	Not needed	Wetness.
Dundee: Dd	Moderate: seepage.	Moderate: seepage, compressible, piping.	Favorable	Not needed	Favorable.
[1]De: Dundee part	Moderate: seepage.	Moderate: seepage, compressible, piping.	Favorable	Not needed	Favorable.
Sharkey part	Slight	Moderate: low strength, compressible, shrink-swell.	Percs slowly	Not needed	Wetness.
Fausse: FA, FS	Slight	Moderate: shrink-swell, compressible, low strength.	Floods, percs slowly.	Not needed	Not needed.
Frost: Ft	Slight	Slight	Floods, percs slowly.	Not needed	Wetness.

See footnotes at end of table.

TABLE 9.--WATER MANAGEMENT--Continued

Limitations for--		Features affecting--		
Pond reservoir areas	Embankments, dikes, and levees	Drainage	Terraces and diversions	Grassed waterways
erate: epage.	Slight	Favorable	Not needed	Favorable.
erate: epage.	Slight	Not needed	Not needed	Favorable.
ght	Moderate: shrink-swell, low strength, compressible.	Percs slowly	Not needed	Wetness.
ght	Moderate: compressible, low strength, shrink-swell.	Percs slowly	Not needed	Wetness.
erate: epage.	Slight	Favorable	Not needed	Favorable.
erate: epage.	Moderate: piping, compressible, erodes easily.	Not needed	Erodes easily, piping.	Favorable.
erate: epage.	Moderate: piping, compressible, erodes easily.	Not needed	Slope, erodes easily, piping.	Slope.
erate: epage.	Moderate: piping, compressible, erodes easily.	Not needed	Not needed	Favorable.
ght	Slight	Percs slowly	Not needed	Wetness.
ght	Slight	Percs slowly	Not needed	Favorable.
ght	Moderate: low strength, compressible, shrink-swell.	Percs slowly	Not needed	Wetness.
ght	Moderate: low strength, compressible, shrink-swell.	Floods, percs slowly.	Not needed	Wetness.

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—Continued

ygrounds	Paths and trails
	Slight.
:	Moderate: slope.
, lowly, yey.	Severe: wetness, too clayey.
lowly, yey, .	Severe: too clayey, wetness.
: , lowly.	Moderate: wetness.
:	Slight.
	Slight.
	Slight.
s.	Severe: wetness.
e: s, slowly.	Moderate: wetness.
ayey, slowly, s.	Severe: too clayey, wetness.
, ayey, slowly.	Severe: floods, too clayey, wetness.

ng unit description for the

OIL SURVEY

ANTS ON SELECTED SOILS IN WETLANDS

soil. Uncommon--observed growing on the soil in a few places]

ts	Vines	Shrubs and shrublike plants	Trees
ur,	Common: Climbing hempweed, Grape, Japanese climbing fern, Peppervine, Poison-ivy, Rattan, Trumpetcreeper, Virginia creeper. Uncommon: Buckwheatvine, Carolina snailseed, Common greenbrier, Morningglory, Saw greenbrier.	Common: American elderberry, Blackberry, Carolina waxmyrtle, Dewberry, Possumhaw, Roughleaf dogwood, Southern waxmyrtle. Uncommon: Bluefruited dogwood, Dwarf palmetto, Eastern baccharis, Leadplant.	Common: American sycamore, Baldcypress, Black willow, Boxelder, Common persimmon, Drummond red maple, Eastern cottonwood, Green ash, Laurel oak, Sugarberry, Sweetgum. Uncommon: American elm, Live oak, Nuttall oak, Overcup oak.
t,			
,			
ur,	Common: None. Uncommon: Buckwheatvine, Carolina snailseed, Climbing hempweed, Poison-ivy, Rattan.	Common: None. Uncommon: American elderberry.	Common: Black willow. Uncommon: American sycamore, Baldcypress, Eastern cottonwood, Green ash.
,	Common: None.	Common: Buttonbush.	Common: Black willow.
).	Uncommon: None.	Uncommon: None.	Uncommon: Baldcypress, Water tupelo.

ANTS ON SELECTED SOILS IN WETLANDS--Continued

ɔs and ɛ plants	Vines	Shrubs and shrublike plants	Trees
rweed, , i, noss, acinth. ed, gweed, luchea.	Common: None. Uncommon: Buckwheatvine, Poison-ivy, Rattan.	Common: Buttonbush. Uncommon: Bluefruited dogwood, Eastern baccharis, Hawthorn, Leadplant, Roughleaf dogwood, Swampprivet.	Common: Baldcypress, Black willow, Green ash, Honeylocust, Pumpkin ash, Sugarberry, Sweetgum, Water-hickory, Water tupelo. Uncommon: Common persimmon, Drummond red maple, Nuttall oak, Water-elm,
rweed, ocklebur, , d, noss, acinth. ed, gweed, luchea.	Common: None. Uncommon: Buckwheatvine, Climbing hempweed, Poison-ivy, Rattan.	Common: None. Uncommon: Blackberry, Bluefruited dogwood, Eastern baccharis, Hawthorne, Leadplant, Roughleaf dogwood, Swampprivet.	Common: Baldcypress, Black willow, Green ash, Pumpkin ash, Sugarberry, Water-hickory, Water tupelo. Uncommon: Common persimmon, Drummond red maple, Eastern cottonwood, Honeylocust, Nuttall oak, Water-elm, Waterlocust.
bena, ed, ttle, ocklebur, ock, gweed, d, t, d, moss, rweed, k-plant, d, p, el, er, luchea, ke ttle, acinth.	Common: Peppervine, Poison-ivy, Rattan. Uncommon: Buckwheatvine, Carolina snailseed, Climbing hempweed, Common greenbrier, Grape, Japanese climbing fern, Morningglory, Saw greenbrier, Trumpetcreeper , Virginia creeper.	Common: Blackberry, Buttonbush, Eastern baccharis, Hawthorne, Leadplant, Roughleaf dogwood. Uncommon: American elderberry, Bluefruited dogwood, Dewberry, Dwarf palmetto, Possumhaw, Swampprivet.	Common: Baldcypress, Black willow, Common persimmon, Drummond red maple, Green ash, Honeylocust, Pumpkin ash, Sugarberry, Sweetgum, Water-hickory, Waterlocust, Water-oak. Uncommon: American elm, American sycamore, Boxelder, Eastern cottonwood, Laurel oak, Nuttall oak, Overcup oak, Water-elm, Water tupelo.

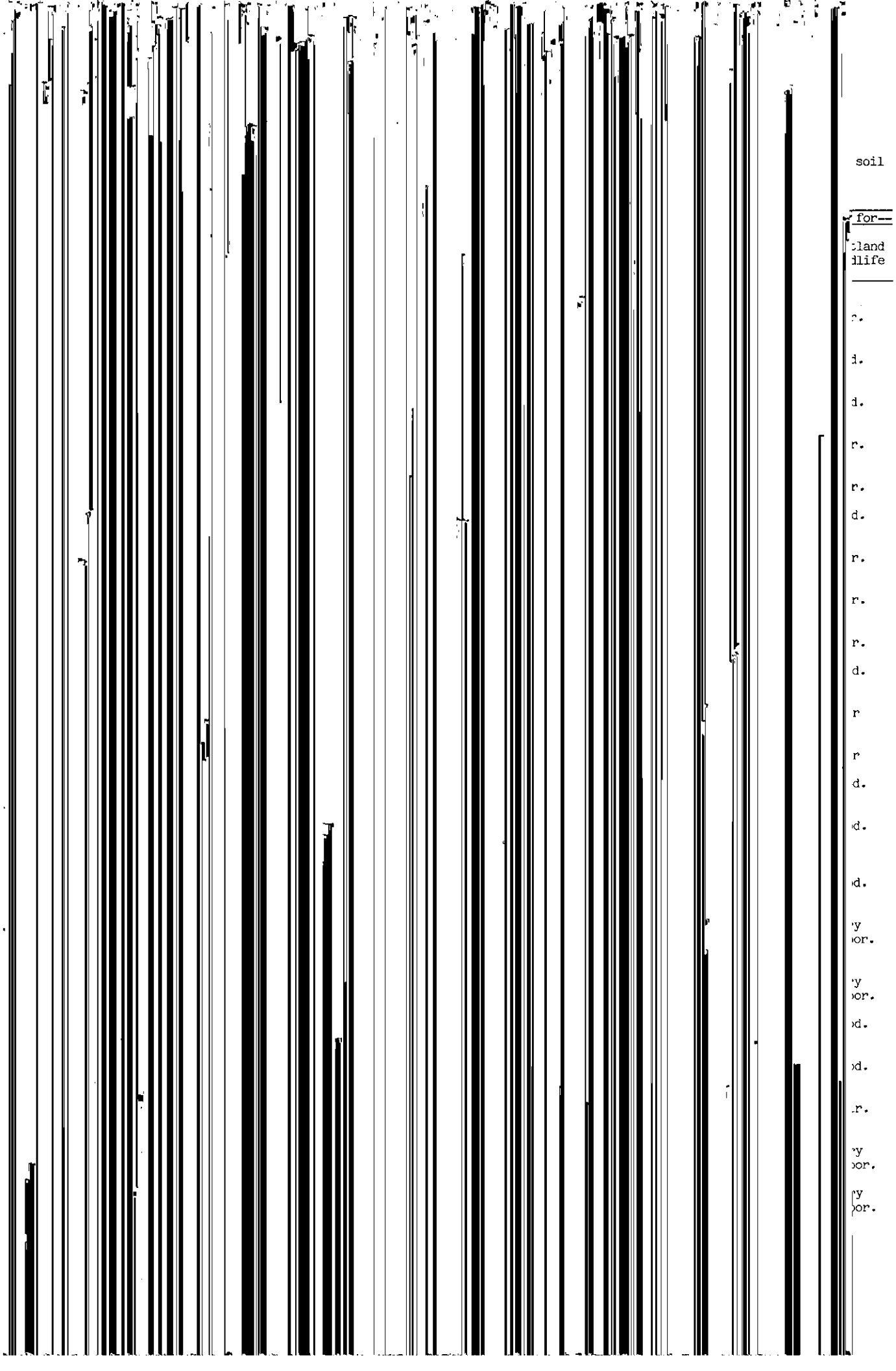
soil
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TABLE 12.--SOIL RATINGS FOR WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for—		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Memphis:										
[1]Mp:										
Memphis part	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Frost part	Poor	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
Patoutville:										
Pt	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair.
Sharkey:										
Sh	Fair	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
Sk	Poor	Fair	Fair	Good	---	Fair	Fair	Poor	Fair	Fair.

[1]This mapping unit is made up of two dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

SOIL SURVEY

ERING PROPERTIES AND CLASSIFICATIONS

is less than; > means greater than]

Classification		Percentage passing sieve number—				Liquid limit	Plasticity index
Unified	AASHTO	4	10	40	200		
						Pct	
ML, CL-ML	A-4	100	100	100	90-100	<27	[1]NP-7
CL	A-6, A-7-6	95-100	90-100	85-100	75-100	31-45	11-22
CL, CL-ML	A-4, A-6	95-100	90-100	85-100	75-100	20-36	5-15
CL, CH	A-7-6, A-6	100	100	100	95-100	35-55	15-28
CH	A-7-6	95-100	95-100	95-100	90-100	51-75	25-45
CH, CL	A-7-6, A-6	95-100	95-100	95-100	90-100	35-65	15-35
CL-ML, ML, CL	A-4	100	100	100	95-100	<31	NP-10
CL	A-6	100	100	100	95-100	32-40	12-18
CL, CL-ML	A-6, A-4	100	100	100	95-100	26-35	5-15
ML, CL-ML	A-4	100	100	95-100	85-100	<27	NP-7
ML, CL, CL-ML, CH	A-4, A-6, A-7-6	100	100	95-100	65-100	<85	NP-50
ML, CL-ML	A-4	100	100	95-100	85-100	<27	NP-7
ML, CL, CL-ML, CH	A-4, A-6, A-7-6	100	100	95-100	65-100	<85	NP-50
ML	A-4	100	100	95-100	65-95	<22	NP-3
ML, CL, CL-ML, CH	A-4, A-6, A-7-6	100	100	95-100	65-100	<85	NP-50
CL-ML, CL	A-4, A-6, A-7-6	100	100	95-100	60-100	25-48	5-24
ML, CL-ML	A-4	100	100	100	95-100	<27	NP-7
CL, ML	A-6	100	100	100	95-100	33-40	12-18
CL-ML, CL, ML	A-4, A-6	100	100	100	95-100	25-37	5-15
ML, CL-ML	A-4	100	100	100	95-100	<27	NP-7
CL, ML	A-6	100	100	100	95-100	33-40	12-18
CL-ML, CL, ML	A-4, A-6	100	100	100	95-100	25-37	5-15

NG PROPERTIES AND CLASSIFICATIONS--Continued

Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
Unified	AASHTO	4	10	40	200		
						Pct	
CL-ML, CL	A-4	100	100	100	80-100	25-31	5-10
CL	A-6, A-7-6	100	100	100	90-100	35-50	15-25
ML, CL-ML,	A-4	100	100	90-100	75-98	20-27	3-7
CL	A-6, A-7-6	100	100	90-100	80-95	35-42	15-20
CH, CL	A-7-6, A-6	100	100	90-100	95-100	30-56	10-30
ML, CL-ML	A-4	100	100	90-100	75-98	20-27	3-7
CL	A-6, A-7-6	100	100	90-100	80-95	35-42	15-20
CH	A-7-6,	100	100	90-100	95-100	30-56	10-30
CH, CL	A-7-6	100	100	100	95-100	46-60	22-33
CH	A-7-6	100	100	100	95-100	56-85	30-50
CH, OH, MH	A-7-6, A-7-5	100	100	100	95-100	60-100	30-65
CH, MH	A-7-6, A-7-5	100	100	100	95-100	60-105	30-73
CH, OH, MH	A-7-6, A-7-5	100	100	100	95-100	60-90	30-52
CH, MH	A-7-6, A-7-5	100	100	100	95-100	60-90	30-52
CL-ML, CL	A-4	100	100	100	85-100	25-31	5-10
CL	A-6, A-7-6	100	100	100	90-100	35-50	15-25
ML, CL-ML	A-4	100	100	100	90-100	<27	NP-7
CL	A-6	100	100	100	90-100	32-40	11-17
CL, CL-ML	A-6, A-4	100	100	100	90-100	23-35	4-15
ML, CL-ML	A-4	100	100	100	90-100	<27	NP-7
CL	A-6	100	100	100	90-100	32-40	11-17
CL, CL-ML	A-6, A-4	100	100	100	90-100	23-35	4-15
CL	A-6, A-7-6	100	100	100	95-100	35-50	15-25
CH	A-7-6	100	100	100	95-100	60-80	33-50
CH, CL, MH	A-7-6 A-7-5	100	100	100	95-100	45-75	22-40
CH	A-7-6	95-100	90-100	90-100	85-100	51-75	25-45
CL-ML, CL, ML	A-4	100	100	100	85-100	<31	NP-10
CL	A-6, A-7-6	95-100	90-100	90-100	85-100	32-45	11-22
CL-ML, CL	A-4	95-100	90-100	90-100	85-100	23-31	4-10

TABLE 13.—ENGINEERING PROPERTIES AND CLASSIFICATIONS—Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Memphis:										
Me	0-6	Silt loam	ML, CL-ML	A-4	100	100	100	90-100	<27	NP-7
	6-40	Silty clay loam	CL	A-6, A-7-6	100	100	100	90-100	35-45	15-23
	40-60	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
Mh	0-4	Silt loam	ML, CL-ML	A-4	100	100	100	90-100	<27	NP-7
	4-17	Silty clay loam	CL	A-6,	100	100	100	90-100	35-45	15-23
	17-90	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
[2]Mp:										
Memphis part	0-7	Silt loam	ML, CL-ML	A-4	100	100	100	90-100	<27	NP-7
	7-40	Silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-45	15-23
	40-60	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
Frost part	0-20	Silt loam	CL-ML, CL	A-4	100	100	100	80-100	25-31	5-10
	20-46	Silty clay loam	CL	A-6, A-7-6	100	100	100	90-100	35-50	15-25
	46-72	Silt loam	CL	A-6	100	100	100	80-100	31-40	11-20
Patoutville:										
Pt	0-7	Silt loam	ML, CL-ML	A-4	100	100	100	95-100	<28	NP-7
	7-36	Silty clay loam	CL	A-6, A-7-6	100	100	100	95-100	30-50	13-25
	36-60	Silty clay loam, silt loam.	CL	A-6	100	100	100	95-100	25-40	8-20
Sharkey:										
Sh	0-5	Clay, silty clay	CH, CL	A-7-6	100	100	100	95-100	46-85	22-50
	5-52	Clay	CH	A-7-6	100	100	100	95-100	56-85	30-50
	52-70	Clay, silty clay loam, silt loam, silty clay.	CL-ML, CL, CH	A-4, A-6, A-7-6	100	100	100	95-100	25-85	5-50
Sk	0-4	Clay, silty clay	CH, CL	A-7-6	100	100	100	95-100	46-85	22-50
	4-64	Clay	CH	A-7-6	100	100	100	95-100	56-85	30-50

[1]NP means nonplastic.

[2]This mapping unit is made up of two dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[Dashes indicate data were not available. The symbol < means less than; > means greater than]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion	
						Uncoated steel	Concrete
	In	In/hr	In/in	pH			
Acy:							
Ac	0-6	0.6-2.0	0.21-0.23	5.6-7.3	Low	High	Low.
	6-24	0.2-0.6	0.20-0.22	6.1-8.4	Moderate	High	Low.
	24-75	0.2-0.6	0.20-0.22	6.6-8.4	Low	High	Low.
Baldwin:							
Ba	0-6	.06-0.2	0.18-0.22	5.6-6.5	Moderate	High	Moderate.
	6-20	<0.06	0.17-0.20	6.1-7.8	Very high	High	Moderate.
	20-60	<0.2	0.17-0.21	6.6-8.4	High	High	Low.
Calhoun:							
Ca	0-13	0.2-0.6	0.21-0.23	5.1-6.0	Low	High	Moderate.
	13-57	0.06-0.2	0.20-0.22	4.5-5.5	Low	High	Moderate.
	57-70	0.2-0.6	0.21-0.23	5.1-6.5	Low	High	Moderate.
Convent:							
CB	0-52	0.6-2.0	0.18-0.23	6.6-8.4	Low	Moderate	Low.
	52-60	<2.0	0.12-0.23	7.4-8.4	Low to very high	Moderate	Low.
CO	0-40	0.6-2.0	0.18-0.23	6.6-8.4	Low	Moderate	Low.
	40-60	<2.0	0.15-0.23	7.4-8.4	Low to very high	Moderate	Low.
[1]CH:							
Convent part	0-60	0.6-2.0	0.15-0.20	7.4-8.4	Low	Moderate	Low.
	60-70	<2.0	0.12-0.23	7.4-8.4	Low to very high	Moderate	Low.
Hydraquents part	0-60	0.06-0.6	0.16-0.21	7.4-8.4	Moderate	Moderate	Low.
Coteau:							
Cu	0-8	0.2-0.6	0.21-0.23	5.1-6.0	Low	High	Moderate.
	7-32	0.2-0.6	0.20-0.23	5.1-6.0	Moderate	High	Moderate.
	32-96	0.2-0.6	0.20-0.23	5.1-6.5	Low	High	Moderate.
[1]Cx:							
Coteau part	0-7	0.2-0.6	0.21-0.23	5.1-6.0	Low	High	Moderate.
	7-32	0.2-0.6	0.20-0.23	5.1-6.0	Moderate	High	Moderate.
	32-96	0.2-0.6	0.20-0.23	5.1-6.5	Low	High	Moderate.
Frost part	0-24	0.2-0.6	0.21-0.23	4.5-6.0	Low	High	Moderate.
	24-72	0.06-0.2	0.20-0.22	4.5-7.3	Moderate	High	Low.
Dundee:							
Dd	0-7	0.6-2.0	0.15-0.20	5.1-6.0	Low	High	Moderate.
	7-42	0.2-0.6	0.15-0.20	5.1-6.0	Moderate	High	Moderate.
	42-70	<0.06	0.14-0.18	5.6-7.3	High	High	Moderate.
[1]De:							
Dundee part	0-7	0.6-2.0	0.15-0.20	5.1-6.0	Low	High	Moderate.
	7-36	0.2-0.6	0.15-0.20	5.1-6.0	Moderate	High	Moderate.
	36-70	<0.06	0.14-0.18	5.6-7.3	High	High	Moderate.
Sharkey part	0-12	<0.06	0.18-0.20	5.6-7.3	Very high	High	Low.
	12-60	<0.06	0.18-0.20	6.1-8.4	Very high	High	Low.
Fausse:							
FA	0-14	<0.06	0.18-0.20	5.6-7.3	Very high	High	Low.
	14-60	<0.06	0.18-0.20	6.6-8.4	Very high	High	Low.
FS	0-16	<0.06	0.18-0.20	5.6-7.3	Very high	High	Low.
	16-60	<0.06	0.18-0.20	6.6-8.4	Very high	High	Low.
Frost:							
Ft	0-24	0.2-0.6	0.21-0.23	4.5-6.0	Low	High	Moderate.
	24-60	0.06-0.2	0.20-0.22	4.5-6.5	Moderate	High	Low.

See footnotes at end of table.

OF SOILS--Continued

Shrink-swell potential	Risk of corrosion	
	Uncoated steel	Concrete
w	Low	Low.
derate	Moderate	Low.
w	Low	Low.
w	Low	Low.
derate	Moderate	Low.
w	Low	Low.
gh	High	Moderate.
ry high	High	Low.
ry high	High	Low.
ry high	High	Low.
w	High	Low.
derate	High	Low.
w	High	Low.
w	Low	Moderate.
w	Moderate	Moderate.
w	Low	Moderate.
w	Low	Moderate.
w	Moderate	Moderate.
w	Low	Moderate.
w	Low	Moderate.
w	Moderate	Moderate.
w	Low	Moderate.
w	High	Moderate.
derate	High	Moderate.
w	High	Low.
w	High	Moderate.
derate	High	Moderate.
derate	High	Low.
ry high	High	Low.
ry high	High	Low.
ry high	High	Low.
ry high	High	Low.
ry high	High	Low.

kinds of soil. See mapping unit
mapping unit.

TABLE 15.--CLASSIFICATION OF THE SOILS

Series	Family	Subgroup	Order
Acy	Fine-silty, mixed, thermic	Aeric Ochraqualfs	Alfisols.
Baldwin	Fine, montmorillonitic, thermic	Vertic Ochraqualfs	Alfisols.
Calhoun	Fine-silty, mixed, thermic	Typic Glossaqualfs	Alfisols.
Convent	Coarse-silty, mixed, nonacid, thermic	Aeric Fluvaquents	Entisols.
Coteau	Fine-silty, mixed, thermic	Glossaquic Hapludalfs	Alfisols.
Dundee	Fine-silty, mixed, thermic	Aeric Ochraqualfs	Alfisols.
Fausse	Very-fine, montmorillonitic, nonacid, thermic	Typic Fluvaquents	Entisols.
Frost	Fine-silty, mixed, thermic	Typic Glossaqualfs	Alfisols.
Gallion	Fine-silty, mixed, thermic	Typic Hapludalfs	Alfisols.
Hydraquents	----------	[1]/Hydraquents	Entisols.
Iberia	Fine, montmorillonitic, thermic	Vertic Haplaquolls	Mollisols.
Loreauville	Fine-silty, mixed, thermic	Udollic Ochraqualfs	Alfisols.
Memphis	Fine-silty, mixed, thermic	Typic Hapludalfs	Alfisols.
Patoutville	Fine-silty, mixed, thermic	Aeric Ochraqualfs	Alfisols.
Perry	Very-fine, montmorillonitic, nonacid, thermic	Vertic Haplaquepts	Inceptisols.
Sharkey	Very-fine, montmorillonitic, nonacid, thermic	Vertic Haplaquepts	Inceptisols.

[1]Classified only at the great group level.

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