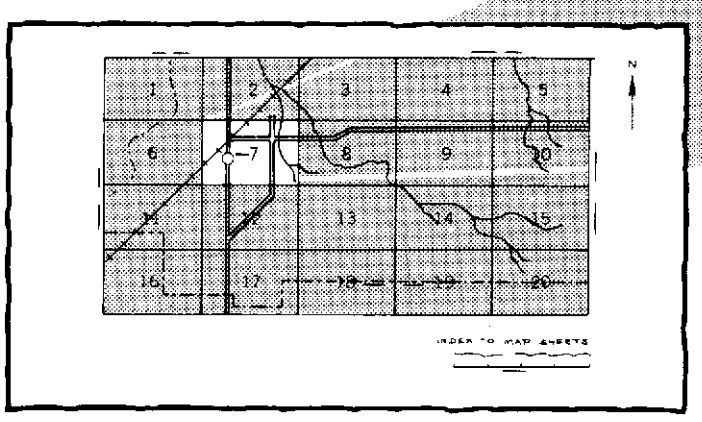
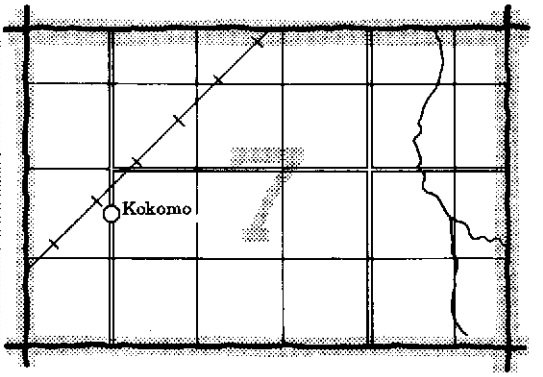
# *Soil Survey of*
# *Pointe Coupee and West Baton Rouge Parishes Louisiana*

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

# HOW TO USE

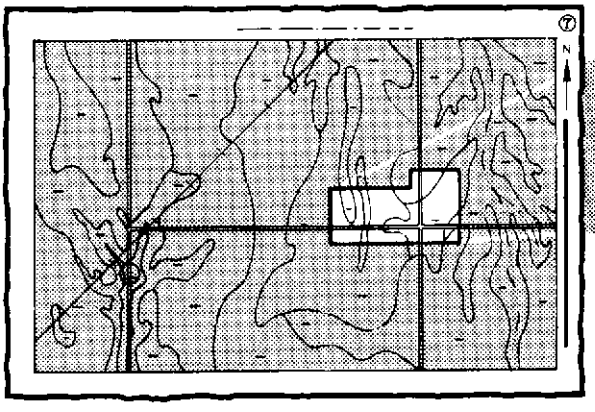
**1.** Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

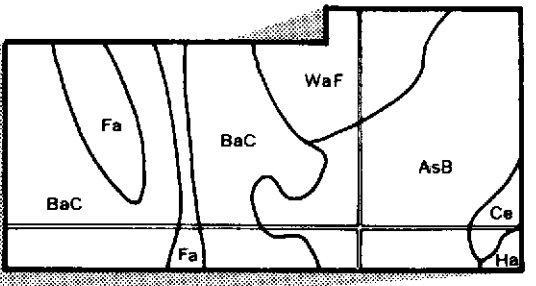


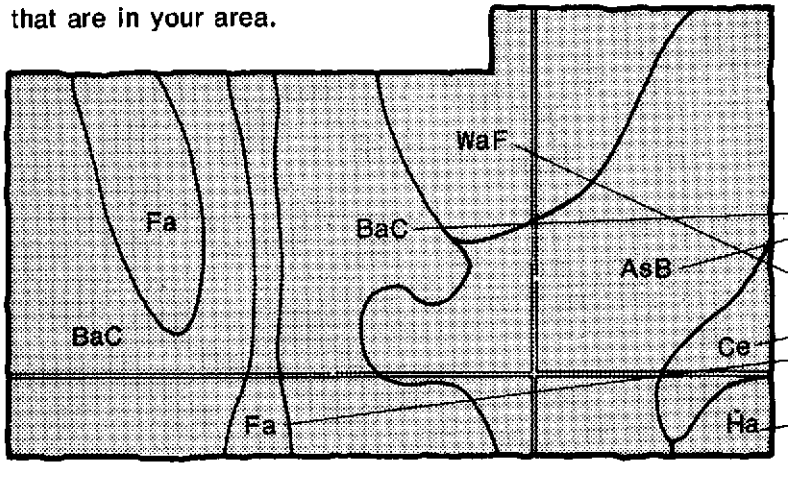

**2.** Note the number of the map sheet and turn to that sheet.

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




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




## Symbols

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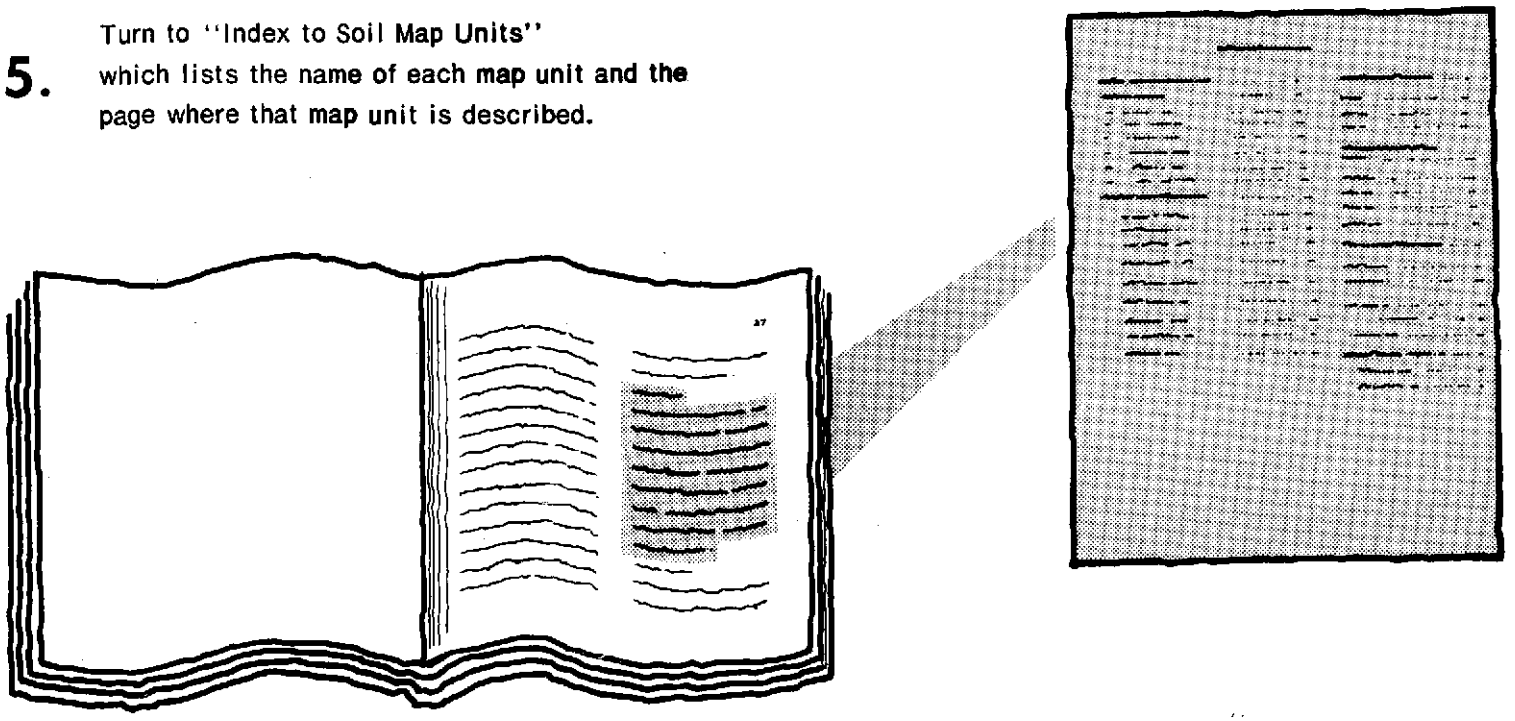
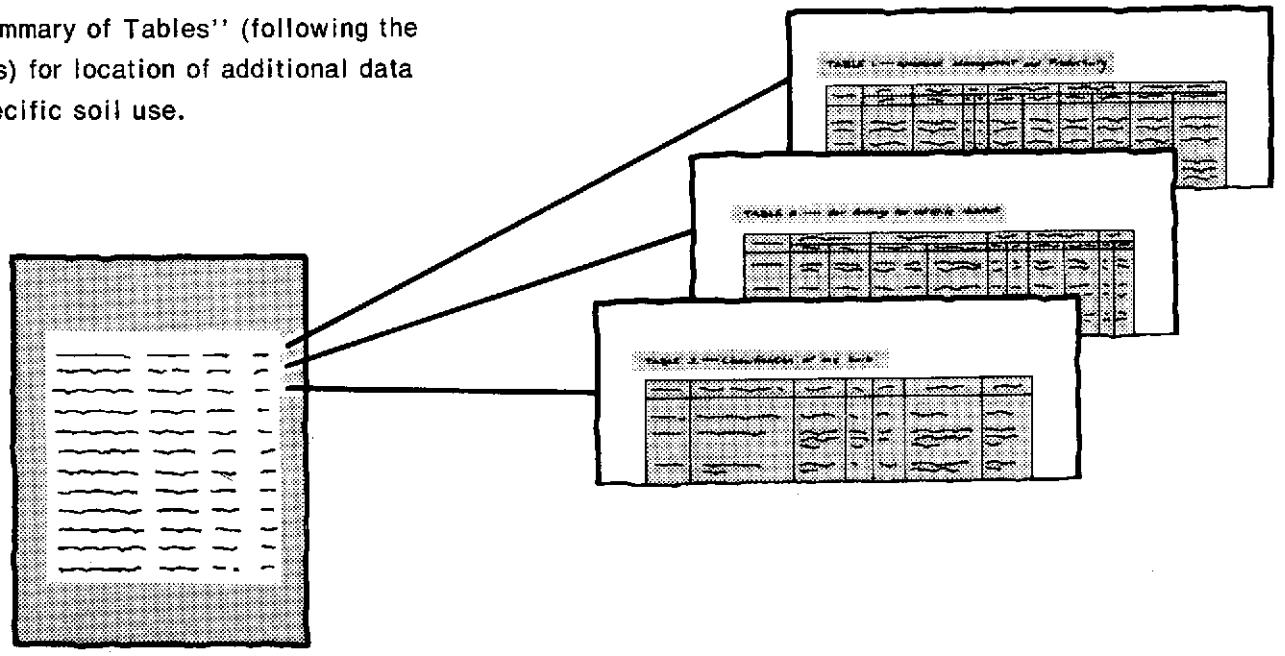
# THIS SOIL SURVEY

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



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



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

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

Major fieldwork for this soil survey was performed in the period 1976-79. Soil names and descriptions were approved in 1980. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1980. This survey was made cooperatively by the Soil Conservation Service, the Louisiana Agricultural Experiment Station, and the Louisiana State Soil and Water Conservation Committee. It is part of the technical assistance furnished to the Upper Delta Soil and Water Conservation District.

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

*Cover: Sugarcane on Bruin very fine sandy loam. Once the main crop in the survey area, it is now secondary to soybeans in acreage.*

# contents



## soil series



Issued March 1982

# index to map units

# summary of tables

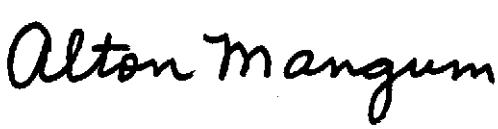
# foreword

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

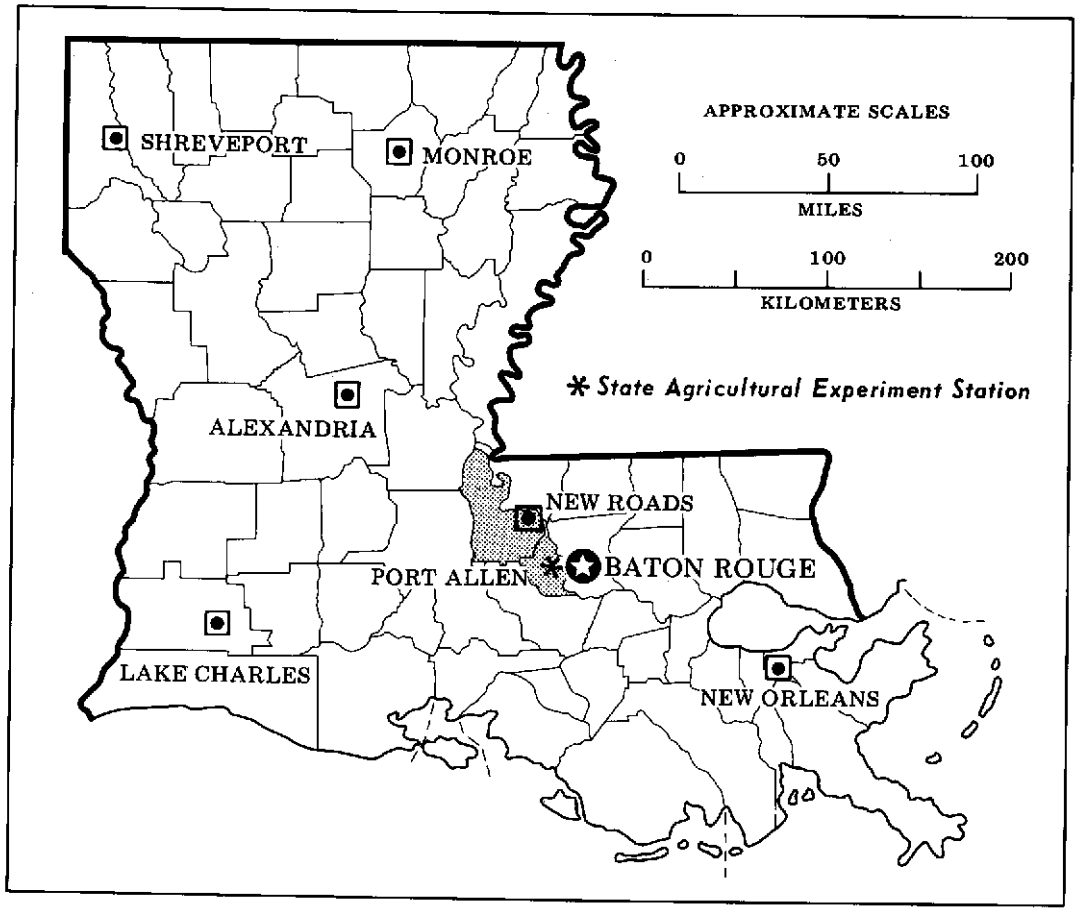
This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey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

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

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



Alton Mangum
State Conservationist
Soil Conservation Service




*Location of Pointe Coupee and West Baton Rouge Parishes in Louisiana.*

# soil survey of
# Pointe Coupee and West Baton Rouge Parishes Louisiana

By John W. Powell, Gail L. Bowden, Donny L. Latiolais, and Lyfon Morris,
Soil Conservation Service

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

POINTE COUPEE AND WEST BATON ROUGE PARISHES are in the south-central part of Louisiana. Both parishes are bordered on the east side by the Mississippi River and are about 95 miles northwest of New Orleans. Pointe Coupee Parish is bordered on the north and west by the Atchafalaya River and on the south by St. Martin, Iberville, and West Baton Rouge Parishes. West Baton Rouge Parish is bordered on the south by Iberville Parish. The elevation ranges from less than 8 feet above sea level in the Portage Swamp area of Pointe Coupee Parish to 50 feet above sea level on the natural levee of the Atchafalaya River. The total area of Pointe Coupee Parish is 376,320 acres, and the total area of West Baton Rouge Parish is 135,680 acres. In 1970 the population in Pointe Coupee Parish was 22,002, and the population in West Baton Rouge Parish was 16,864. New Roads is the parish seat of Pointe Coupee Parish, and Port Allen is the parish seat of West Baton Rouge Parish.

Pointe Coupee and West Baton Rouge Parishes are entirely within the Mississippi River alluvial plain. The soils formed in sediment deposited by the Mississippi and Atchafalaya Rivers and their distributaries. Loamy soils are dominant on the natural levees, and clayey soils are dominant in the backswamps. A large part of the acreage of the survey area is protected from flooding by a levee system along the Mississippi and Atchafalaya Rivers and levees along the Morganza Floodway.

Most of the soils that are subject to flooding are in woodland. Nearly all of the soils that are protected from flooding are used for cultivated crops and pasture. A small acreage is used for urban land. The fertile, loamy soils on the natural levees of the Mississippi and Atchafalaya Rivers and their distributaries are well suited to crops, mainly soybeans and sugarcane.

Excess surface water is a limitation to land use throughout the survey area. Drainage and flood control are major concerns.

The Mississippi and Atchafalaya Rivers and the Intracoastal Waterway are major water transportation routes. The Morganza Floodway is used for recreation and by the freshwater fishing industry.

Descriptions, names, and delineations of soils in this soil survey do not fully agree with those on soil maps for adjacent parishes. Differences are the result of more information about soils, modifications in series concepts, intensity of mapping, or the extent of soils within the survey area.

## general nature of the survey area

This section gives general information concerning the survey area. It gives information about climate, settlement, agriculture, transportation, industry, water resources, and the Morganza Floodway.

### climate

Prepared by the National Climatic Center, Asheville, N.C.

Pointe Coupee and West Baton Rouge Parishes have long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short, with only a rare cold wave that

moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly afternoon thundershowers, is adequate for all crops.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Old River Lock, Louisiana, in the period 1965 to 1977. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 50° F, and the average daily minimum temperature is 39°. The lowest temperature on record, which occurred at Old River Lock on January 11, 1977, is 13°. In summer the average temperature is 80°, and the average daily maximum temperature is 91°. The highest recorded temperature, which occurred at Old River Lock on July 5, 1969, is 101°.

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

The total annual precipitation is 60 inches. Of this, 30 inches, or 50 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 23 inches. The heaviest 1-day rainfall during the period of record was 12.4 inches at Old River Lock on April 15, 1967. Thunderstorms occur on about 70 days each year, and most occur in summer. Snowfall is rare.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines 60 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the southeast. Average windspeed is highest, 10 miles per hour, in winter.

Severe local storms, including tornadoes, strike occasionally in or near the area. The storms are short and cause variable damage. Every few years, in summer or autumn, a tropical depression or remnant of a hurricane that has moved inland causes extremely heavy rains from 1 to 3 days.

## settlement

Pointe Coupee and West Baton Rouge Parishes were first explored in 1699 by Pierre L. d'Iberville. The name of Pointe Coupee Parish originated in 1717 when Iberville's younger brother, Bienville, established a post in the area and named it Pointe Coupee.

Both Pointe Coupee and West Baton Rouge Parishes were established by an act of the first territorial legislature of the Territory of Orleans in 1807. These parishes were among the first 19 parishes into which the Territory of Orleans was divided at that time.

Early settlers discovered that the survey area was inhabited by mound-building Indians. Many Indian mounds still exist. The early settlers, mainly of French descent, lived along the banks of the Mississippi River. They cultivated the land, managed company stores, and received supplies from packet-boats that made regular stops at the landings along the river. These boats carried the farmer's produce to market on their return trips.

When the land adjoining the river became populated, the settlers moved further inland to densely wooded areas. These areas were burned off for use as cropland. The burned-off areas had no access to water and were known as "brusles". The oldest settlement in the survey area, Brusly Landing, was incorporated in 1901. Port Allen, the parish seat of West Baton Rouge Parish, was graphically laid out in 1854 and was named West Baton Rouge. In 1878, this name was changed to Port Allen in honor of Governor Henry W. Allen. Port Allen is the largest city in the survey area.

## agriculture

Pointe Coupee and West Baton Rouge Parishes are mostly agricultural areas. The main crops are soybeans and sugarcane. The acreage of soybeans has increased significantly during the past 10 years and is now the main crop. In addition, cotton, corn, wheat, and rice are also grown. In places, double cropping, with soybeans planted after wheat in the same growing season, is common.

Sugarcane was the principal crop for many years. Along the river roads, refineries of different vintages are still in operation. These "sugar houses" are remnants of marketplaces for sugarcane grown on the large plantations that were established along the river's edge.

According to the 1974 Census of Agriculture, the number of farms in the survey area decreased from 952 in 1969 to 716 in 1974. The acreage used as woodland and pastureland is decreasing, and the acreage used as cropland is increasing. Urban land use and built-up areas are also increasing. The most rapidly expanding urban area is Port Allen.

## transportation

A large network of roads, mostly hard-surfaced state and parish highways, are in the survey area. These highways provide important connections between agricultural areas and industrial and commercial centers. Louisiana Highway 1 crosses both Pointe Coupee and West Baton Rouge Parishes from north to south. U.S. Highway 190 crosses the south end of Pointe Coupee Parish and the north end of West Baton Rouge Parish. Interstate 10 passes through the center of West Baton Rouge Parish in an east-west direction.

The parishes are served by north-south routes of railroads. In addition, commercial airlines make daily flights from nearby Baton Rouge.

Major water transportation routes are available to each parish. The Mississippi and Atchafalaya Rivers border Pointe Coupee Parish, and the Mississippi River and the Intracoastal Waterway are along West Baton Rouge Parish. The Mississippi River and the Intracoastal Waterway allow large ships and barges to reach Baton Rouge and Port Allen, two of the largest inland ports in the State. Several smaller natural waterways provide transportation routes for smaller boats.

## industry

Industry is steadily expanding in Pointe Coupee and West Baton Rouge Parishes, mainly along the Mississippi and Atchafalaya Rivers. These rivers provide a plentiful source of fresh water and a means of transportation.

Port Allen is an important shipping port for agricultural and petrochemical products. A large electrical power generating plant is located near New Roads. Power is produced by steam generators that use coal as fuel. Coal is easily transported on the Mississippi River.

## water resources

By Charles R. Akers, geologist, Soil Conservation Service.

**Surface water.**—Pointe Coupee and West Baton Rouge Parishes have abundant surface water resources. The Mississippi River usually provides abundant water for residential, agricultural, and industrial uses. From 1927 to 1965, the average flow of the river was about 600,000 cubic feet per second. A minimum flow of about 75,000 cubic feet per second occurred in 1939 (*5*). The water, which is of the moderately hard to very hard, calcium bicarbonate type, is suitable for various industrial processes or for irrigation (*13*).

Raccourci Old River, an oxbow lake, has a potential reservoir capacity of nearly 30 billion gallons. This lake is replenished mainly by periodic overflow from the Mississippi River (*13*).

False River, another oxbow lake, has a reservoir capacity of more than 20 billion gallons. It is replenished by rainfall and by some ground water discharge.

The Atchafalaya River also is a source of surface water. During periods of low flow in the Red and Black Rivers, the water of the Atchafalaya River may have significantly higher saline characteristics than is normal (*13*). In addition, the Intracoastal Waterway is a source of large amounts of water.

**Ground water.**—Ground water is abundant in Pointe Coupee and West Baton Rouge Parishes from several alluvial and sand aquifers—

- the alluvial aquifers—geologically, Atchafalaya Aquifer and Upper Chicot Aquifer
- the 400-foot sand aquifer (in West Baton Rouge Parish only) and the 600-foot sand aquifer—Lower Chicot Aquifer
- the 800-foot, the 1,000-foot, the 1,200-foot, the 1,500-foot, and the 1,700 sand aquifers—Evangeline Aquifer
- the 2,000-foot, the 2,400-foot, and the 2,800-foot sand aquifers—Miocene series

The alluvial aquifers have produced as much as 4,250 gallons per minute of moderately hard to very hard, calcium carbonate type of water in this area. In the southern part of the survey area, the aquifer produces brackish water that comes from the lower part of the aquifer (*13*).

The 600-foot, 800-foot, 1,000-foot, and 1,200-foot sand aquifers also produce large volumes of water. The 1,200-foot sand aquifer is most important because it has no brackish water. This is due to the thickness of the sand. Where the sand aquifers are hydraulically connected to the alluvial aquifers, the water produced is chemically similar. However, as the water moves toward the Mississippi syncline, it is modified to a soft, sodium bicarbonate type of water. Even though withdrawals in the Baton Rouge area from the 1,200-foot sand aquifer have caused declines of the water level of from 1/2 foot to 1 3/4 feet per year, this aquifer is capable of producing 1,000 to 2,000 gallons of water per minute.

The 1,500-foot, 1,700-foot, and 2,000-foot sand aquifers are other important aquifers in the survey area. The most extensive of these is the 2,000-foot aquifer. Saltwater occurs in this aquifer in the southern part of Pointe Coupee Parish. Water levels have been declining in this aquifer at the rate of 13 feet per year in the Baton Rouge area (*7*). The water of the 2,000-foot sand aquifer is soft, alkaline, and of the sodium bicarbonate type. Water temperature ranges from 85° to 96° F. Yields from wells in the 1,500-foot, 1,700-foot, and 2,000-foot sand aquifers range from 870 to 800 gallons per minute.

Water from wells of the 2,400-foot and 2,800-foot sand aquifers is also of the soft, sodium bicarbonate type. The highest discharge measured, from a municipal well at New Roads, was 2,075 gallons per minute. Water from these aquifers south of New Roads is discolored and contains excessive amounts of fluoride.

## Morganza Floodway

The Morganza Floodway extends from the Mississippi River near the town of Morganza to the southern boundary of Pointe Coupee Parish. It ranges from 4 to 10 miles in width and is enclosed by large, earthen levees. The floodway is part of a complex system for flood control and is regulated by the Federal Government. It carries excess floodwaters from the Mississippi River. Control locks along the river near Morganza divert a small continuous flow of excess water from the river. In 1973, serious damage by floodwaters of the Mississippi River was prevented by diverting the excess water into the Morganza Floodway.

Most of the soils within the Morganza Floodway are subject to flooding and are in areas of woodland. Some areas are subject to scouring and deposition by rapidly flowing waters. Although all of the soils within the floodway are poorly suited to urban uses, many soils are suited to pasture and short-season crops.

The wooded areas and the many streams and bayous within the Morganza Floodway provide excellent habitat for woodland and wetland wildlife. Fishing and hunting are popular activities in the floodway area.

## how this survey was made

Soil scientists made this survey to learn what soils are in the survey area, where they are, and how they can be used. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; and the kinds of native plants or crops. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil. It extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

The soil scientists recorded the characteristics of the profiles and compared those profiles with others in nearby parishes and in more distant places. They classified and named the soils according to nationwide uniform procedures. They drew the boundaries of the soils on aerial photographs. These photographs show trees, buildings, fields, roads, and other details that help in drawing boundaries accurately. The soil maps at the back of this publication were prepared from aerial photographs.

The areas shown on a soil map are called map units. Most map units are made up of one kind of soil. Some are made up of two or more kinds. The map units in this survey area are described under "General soil map units" and "Detailed soil map units."

While a soil survey is in progress, samples of some soils are taken for laboratory measurements and for engineering tests. All soils are field tested to determine their characteristics. Interpretations of those characteristics may be modified during the survey. Data are assembled from other sources, such as test results, records, field experience, and state and local specialists. For example, data on crop yields under defined management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

# general soil map units

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

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

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

The soils in the survey area vary widely in their suitability for major land uses. Table 4 shows the extent of the map units shown on the general soil map. It lists the suitability of each, in relation to that of the other map units, for major land uses and shows soil properties that limit use. Soil suitability ratings are based on the practices commonly used in the survey area to overcome soil limitations. These ratings reflect the ease of overcoming the limitations. They also reflect the problems that will persist even if such practices are used.

Each map unit is rated for *cultivated crops, woodland, urban uses,* and *recreation areas*. Cultivated crops are those grown extensively in the survey area. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments. Intensive recreation areas are campsites, picnic areas, ballfields, and other areas that are subject to heavy foot traffic. Extensive recreation areas are those used for nature study and as wilderness.

## Soils that are seldom to never flooded; outside the Morganza Floodway

The four map units in this group consist mainly of loamy and clayey soils on natural levees of the Mississippi and Atchafalaya Rivers and their distributaries. Manmade levees protect the soils that are subject to flooding.

The four map units make up about 69 percent of the survey area. Most of the acreage is used for cultivated crops. Wetness from the seasonal high water table is the main limitation to most agricultural and urban uses.

### 1. Commerce-Bruin-Convent

*Level to gently undulating, somewhat poorly drained and moderately well drained, loamy soils*

This map unit consists of soils in high and intermediate positions on natural levees of the Mississippi and Atchafalaya Rivers and their distributaries. The landscape in most areas is one of long, smooth slopes of 0 to 1 percent. In other areas it is low, parallel ridges and swales that have slopes of 0 to 3 percent.

This unit makes up about 44 percent of the survey area. It is about 86 percent Commerce soils, 5 percent Bruin soils, 4 percent Convent soils, and 5 percent soils of minor extent.

Commerce soils are somewhat poorly drained and have a surface layer of grayish brown silt loam. The subsoil is mottled, dark grayish brown loam and silt loam. The underlying material is mottled, dark grayish brown to gray silty clay loam.

Bruin soils are moderately well drained and have a surface layer of dark grayish brown very fine sandy loam. The subsoil is mottled, brown very fine sandy loam and loam. The underlying material is grayish brown silt loam and very fine sandy loam.

Convent soils are somewhat poorly drained and have a surface layer of dark grayish brown silt loam. The underlying material is mottled, grayish brown very fine sandy loam to silty clay loam.

Of minor extent in this unit are the poorly drained Mhoon soils, the somewhat poorly drained Vacherie soils, and the well drained Norwood soils. These soils are in high and intermediate positions on natural levees of the Mississippi and Atchafalaya Rivers and their distributaries. Also of minor extent are the poorly drained Sharkey and Tunica soils in the lower positions on the natural levees and the well drained Sterlington soils in the highest positions on natural levees along Bayou Latenache in Pointe Coupee Parish.

The soils making up this map unit are used mainly for sugarcane and soybeans. In a few small areas, they are used as woodland and pasture, and in a few small to large areas, they are used for urban structures.

The soils are well suited to cultivated crops and pasture. Wetness from a seasonal high water table is the main limitation. The soils are well suited to the

production of hardwood trees, although wetness moderately limits the use of equipment. They have good potential for use as habitat for woodland wildlife and are well suited or moderately suited to use as intensive recreation areas. The soils are moderately suited to urban uses. Moderate shrink-swell potential, wetness in low areas, and moderate to moderately slow permeability are the main limitations.

## 2. Dundee-Alligator

*Undulating, somewhat poorly drained and poorly drained, loamy and clayey soils*

This map unit consists of soils on old natural levees of the Mississippi River on False River Island in the Grand Swamp area. The landscape is one of low, parallel ridges and swales that have slopes of 0 to 5 percent.

This unit makes up about 2 percent of the survey area. It is about 42 percent Dundee soils, 27 percent Alligator soils, and 31 percent soils of minor extent.

Dundee soils, on the ridges, are somewhat poorly drained. They have a surface layer of very dark grayish brown silty clay loam. The upper part of the subsoil is mottled, grayish brown clay loam, and the lower part is light brownish gray loam. The underlying material is light brownish gray loam.

Alligator soils, in the swales, are poorly drained. They have a surface layer and a subsoil of dark gray clay. The underlying material is mottled, light grayish brown silty clay loam.

Of minor extent in this unit are the somewhat poorly drained Commerce soils in high and intermediate positions and the poorly drained Mhoon, Sharkey, and Tunica soils in intermediate and low positions.

The soils making up this map unit are used mainly for pasture. In a few small areas, they are used for cultivated crops. In a few large areas, the soils remain in woodland.

The soils are well suited to pasture and woodland and moderately suited to cultivated crops. Wetness and poor tilth are the main limitations. Drainage generally is needed if cultivated crops are grown. Trees are difficult to harvest unless drainage is provided. Seedling mortality is moderate. The soils are moderately suited to poorly suited to use as intensive recreation areas. They have fair to good potential for use as habitat for openland, wetland, and woodland wildlife. The soils are moderately suited to poorly suited to urban uses.

## 3. Sharkey-Tunica

*Level to gently undulating, poorly drained, clayey soils*

This map unit consists of soils in intermediate and low positions on natural levees along the Mississippi River and its distributaries in the False River Lake area. In some areas the landscape is one of broad flats. In other areas it is low, parallel ridges and swales that have slopes of 0 to 3 percent.

This unit makes up about 3 percent of the survey area. It is about 48 percent Sharkey soils, 45 percent Tunica soils, and 7 percent minor soils.

Sharkey soils are in the lowest positions. They have a surface layer of dark grayish brown clay, and a subsoil of mottled, dark gray clay. The underlying material is mottled, gray clay.

Tunica soils are on low ridges at higher elevations. They have a surface layer of dark grayish brown clay and a subsoil of mottled, gray clay. The underlying material is mottled, grayish brown silt loam and fine sandy loam.

Of minor extent in this unit are the poorly drained, clayey Alligator soils in some of the depressional areas, the somewhat poorly drained, loamy Dundee and Commerce soils in slightly higher positions on natural levees; and the poorly drained, loamy Mhoon soils in intermediate positions on some of the natural levees.

The soils making up this map unit are used mainly for pasture and woodland. In a few small areas, they are used for cultivated crops.

The soils are well suited to pasture and woodland. The main limitations are wetness and a clayey surface layer. Timber is difficult to harvest unless drainage is provided. The soils are moderately suited to cultivated crops. Soybeans is the main crop. Wetness and poor tilth are the main limitations. The soils have fair to good potential for use as habitat for openland and woodland wildlife. They are poorly suited to use as intensive recreation areas. The soils are poorly suited to most urban uses. The high and very high shrink-swell potential, wetness, and very slow permeability are major limitations.

## 4. Sharkey

*Level, poorly drained, clayey soils*

This map unit consists of soils in intermediate and low positions on natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. The landscape is mainly one of broad flats that have slopes of less than 1 percent. Only a few natural drainageways exist.

This unit makes up about 20 percent of the survey area. It is about 85 percent Sharkey soils and 15 percent soils of minor extent.

Sharkey soils have a surface layer of dark gray clay and a subsoil of mottled, dark gray and gray clay. The underlying material is mottled, gray clay.

Of minor extent in this unit are the somewhat poorly drained, loamy Commerce soils and the poorly drained, clayey Tunica soils in high and intermediate positions and the very poorly drained Fausse soils in deep depressional areas.

The soils making up this map unit are used mainly for cultivated crops and pasture. Sugarcane and soybeans are the main crops. In a few large areas, the soils are used as woodland, and in a few small areas, they are used for pasture.

The soils are well suited to woodland and pasture. Wetness and the clayey surface layer are the main limitations. The soils are moderately suited to cultivated crops. Wetness and poor tilth are the main limitations. Surface drainage has been installed in most areas.

These soils have fair potential for use as habitat for openland wildlife and good potential as habitat for wetland and woodland wildlife. They are poorly suited to most urban uses and to use as intensive recreation areas. The very high shrink-swell potential, very slow permeability, and wetness are the main limitations.

## Soils that are occasionally or frequently flooded; outside the Morganza Floodway

The two map units in this group consist of clayey soils at a low elevation on natural levees and in backswamps. The soils are subject to flooding by excess water from local drainageways and from adjacent, higher lying soils.

These map units make up about 6 percent of the survey area. Most of the soils used for cultivated crops are occasionally flooded, and most of the soils used for woodland are frequently flooded. Wetness from flooding and the seasonal high water table are the main limitations to most uses.

### 5. Sharkey, occasionally flooded

*Level, poorly drained, occasionally flooded, clayey soils*

This map unit consists of soils in intermediate and lower positions on natural levees along the Mississippi and Atchafalaya Rivers and their distributaries. The landscape is one of broad flats and concave swales. These soils are subject to flooding for short to long periods from local drainageways and from runoff from adjacent, higher lying soils.

This unit makes up about 4 percent of the survey area. It is about 90 percent Sharkey soils and 10 percent soils of minor extent.

Sharkey soils have a surface layer of very dark grayish brown clay. The subsoil and underlying material are mottled, dark gray clay.

Of minor extent in this unit are the poorly drained, clayey Tunica soils in intermediate positions; the somewhat poorly drained, loamy Commerce soils in higher positions; and the very poorly drained Fausse soils in deep depressional areas.

The soils making up this map unit are used mainly for cultivated crops and pasture. Soybeans is the main crop. In a few small to large areas, the soils are used as woodland.

These soils are poorly suited to cultivated crops. Only late-planted crops can be grown. Wetness from flooding, a seasonal high water table, and poor tilth are the main limitations. The soils are moderately suited to pasture and woodland. Timber is difficult to harvest because of poor trafficability. These soils have good potential for use as habitat for wetland and woodland wildlife and fair potential as habitat for openland wildlife. The soils are poorly suited to use as intensive recreation areas and to urban uses because of the hazard of flooding.

### 6. Sharkey, frequently flooded

*Level, poorly drained, frequently flooded, clayey soils*

This map unit consists of soils in the lower positions on natural levees and in backswamps on the flood plains of the Mississippi and Atchafalaya Rivers. The landscape is one of broad flats and depressional areas at low elevations. These soils are subject to flooding for long periods.

This unit makes up about 2 percent of the survey area. It is about 85 percent Sharkey soils and 15 percent soils of minor extent.

Sharkey soils have a surface layer of dark gray clay and a subsoil of mottled, dark gray and gray clay. The underlying material is mottled, gray clay.

Of minor extent in this unit are the somewhat poorly drained Commerce soils and the poorly drained Tunica soils on intermediate positions on natural levees and the very poorly drained Fausse soils in deep depressional areas.

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

The soils are not suited to cultivated crops, intensive recreation areas, and urban uses, and they are poorly suited to pasture. Frequent flooding is a severe limitation. The soils are moderately suited to woodland. The harvesting of timber is difficult because of wetness and flooding. These soils have fair potential for use as habitat for wetland and woodland wildlife and poor potential as habitat for openland wildlife.

## Soils that are occasionally or frequently flooded; inside the Morganza Floodway and between protection levees and rivers

The four map units in this group consist of loamy and clayey soils that are subject to occasional or frequent flooding. These soils are part of the Morganza Floodway and are between the levees and the rivers. Because floodway flow rights are owned by the Federal Government, flooding cannot be prevented.

These four map units make up about 25 percent of the survey area. Most of the acreage is in woodland. Wetness from flooding and the seasonal high water table are the main limitations for most uses.

### 7. Convent, occasionally flooded

*Nearly level, somewhat poorly drained, occasionally flooded, loamy soils*

This map unit consists of soils in the highest positions on natural levees along the Atchafalaya River and its

distributaries within the Morganza Floodway. When the floodway is used to carry excess floodwaters of the Mississippi River, the soils are subject to scouring and deposition.

This unit makes up about 2 percent of the survey area. It is about 85 percent Convent soils and 15 percent soils of minor extent.

Convent soils have a surface layer of dark grayish brown silt loam or silty clay loam. The underlying material is mottled, grayish brown silt loam.

Of minor extent in this unit are the somewhat poorly drained Commerce soils and the poorly drained Sharkey soils in intermediate and lower positions.

The soils making up this map unit are used mainly for woodland. In a few small areas, they are used for pasture or cultivated crops.

The soils are well suited to woodland and pasture. The harvesting of timber is often delayed because of wetness from flooding. During flood periods, cattle need to be moved to protected areas or to pastures at a higher elevation. The soils are moderately suited to cultivated crops. Late-planted crops, such as soybeans, can be grown in most years. These soils have good potential for use as habitat for openland and woodland wildlife and fair potential as habitat for wetland wildlife. The soils are poorly suited to urban uses and to use as intensive recreation areas. Flooding is the main hazard.

## 8. Sharkey-Commerce, occasionally flooded

*Level, poorly drained and somewhat poorly drained, clayey and loamy soils*

This map unit consists of soils in high to low positions on natural levees along the Atchafalaya River and its distributaries within the Morganza Floodway. When the floodway is used to carry excess floodwaters of the Mississippi River, the soils are subject to scouring and deposition.

This unit makes up about 10 percent of the survey area. It is about 70 percent Sharkey soils, 23 percent Commerce soils, and 7 percent soils of minor extent.

Sharkey soils are poorly drained and have a surface layer of dark gray clay or silty clay loam. The subsoil and underlying material are mottled, dark gray and gray clay. These soils are in intermediate and low positions on natural levees.

Commerce soils are somewhat poorly drained and have a surface layer of dark grayish brown silt loam or silty clay loam. The subsoil and underlying material are mottled, grayish brown silty clay loam. These soils are in high and intermediate positions on natural levees.

Of minor extent in this unit are the somewhat poorly drained Convent soils in the higher positions, the poorly drained Tunica soils in intermediate positions, and the very poorly drained Fausse soils in deep depressional areas.

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

These soils are well suited or moderately suited to woodland and pasture. They are poorly suited to cultivated crops. Wetness from flooding, a seasonal high water table, and poor tilth are the main limitations. The harvesting of timber is difficult during wet periods. Crops are damaged by flooding in some years. During flood periods, cattle need to be moved to protected areas. These soils have good potential for use as habitat for wetland and woodland wildlife and fair potential as habitat for openland wildlife. The soils are poorly suited to urban uses and to use as intensive recreation areas because of the hazard of flooding.

## 9. Sharkey-Fausse, frequently flooded

*Level, poorly drained and very poorly drained, frequently flooded, clayey soils*

This map unit consists of soils in the lowest positions on natural levees and in backswamps within the Morganza Floodway. The soils are subject to frequent flooding, scouring, and deposition. The landscape is one of broad flats that have many depressional areas.

This unit makes up about 3 percent of the survey area. It is about 50 percent Sharkey soils, 45 percent Fausse soils, and 5 percent soils of minor extent.

Sharkey soils are poorly drained and are on broad flats. They have a surface layer of dark gray clay or silty clay loam. The subsoil and underlying material are mottled, gray clay.

Fausse soils are very poorly drained and are in depressional areas. They have a surface layer of very dark gray clay or muck. The subsoil and underlying material are mottled, gray clay.

Of minor extent in this unit are the poorly drained Tunica soils in high and intermediate positions.

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

The soils are moderately suited to poorly suited to woodland. Wetness from flooding is the main limitation, and it severely restricts the use of equipment during the harvesting of timber. The soils are not suited to cultivated crops, to urban uses, or to use as intensive recreation areas. They are poorly suited to pasture. During flood periods, cattle need to be moved to protected areas. The soils have good potential for use as habitat for wetland wildlife, fair to poor potential as habitat for woodland wildlife, and poor to very poor potential as habitat for openland wildlife. Fishing and hunting are popular activities in the area.

## 10. Robinsonville-Commerce, occasionally flooded

*Nearly level to gently undulating, well drained and somewhat poorly drained, occasionally flooded, loamy soils*

This map unit consists of soils in high and intermediate positions on natural levees between the protection levees and the channels of the Atchafalaya and Mississippi Rivers. The soils are subject to occasional flooding, scouring, and deposition.

This unit makes up about 10 percent of the survey area. It is about 60 percent Robinsonville soils, 30 percent Commerce soils, and 10 percent soils of minor extent.

Robinsonville soils are well drained and are in high positions on natural levees. The soils have a surface layer of dark grayish brown silt loam or fine sandy loam. The underlying material is stratified, brown and pale brown very fine sandy loam, loam, and loamy very fine sand.

Commerce soils are somewhat poorly drained and are in high or intermediate positions on natural levees. They have a surface layer of dark grayish brown silt loam or silty clay loam. The subsoil and underlying material are mottled, dark grayish brown and grayish brown silt loam and silty clay loam.

Of minor extent in this unit are the somewhat poorly drained Convent soils in the highest positions and the poorly drained Sharkey soils in depressions.

The soils making up this map unit are mainly in native grass pasture. A small acreage is used for cultivated crops.

The soils are well suited to pasture and woodland and moderately suited to cultivated crops. Flooding is the main hazard. During flood periods, cattle need to be moved to protected areas. Late-planted, short-season crops are well suited. These soils have good potential for use as habitat for openland and woodland wildlife and fair to very poor potential as habitat for wetland wildlife. The soils are poorly suited to urban uses and moderately suited to use as intensive recreation areas.

# detailed soil map units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and management of the soils."

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

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

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

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

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

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Dundee-Alligator complex, undulating, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Robinsonville and Commerce soils, occasionally flooded, is an undifferentiated group in this survey area. In these map units, flooding is the overriding limitation for present and expected uses of the soils. Therefore, the soils were not separated.

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

The boundaries of map units in Pointe Coupee and West Baton Rouge Parishes were matched, wherever possible, with those of the published surveys of East Baton Rouge, Iberville, and St. Martin Parishes. However, in a few places there are some differences in the names of the map units. These differences result mainly from changes in soil series concepts, differences in map unit design, and changes in soil patterns near survey area boundaries.

All of the soils in Pointe Coupee and West Baton Rouge Parishes are mapped at the same level of detail, except for those areas within the Morganza Floodway and between stream channels and their protection levees. Flooding so limits the use and management of these soils that separating soils in these areas would be of little value to the land user. Therefore, where flooding is the overriding limitation for expected land uses, soils were not mapped separately.

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

**Bn—Bruin very fine sandy loam.** This is a level, moderately well drained soil in the highest positions on natural levees of old distributary channels of the Mississippi River. Slope is less than 1 percent.

Typically, the surface layer is dark grayish brown very fine sandy loam about 4 inches thick. The upper part of the subsoil is brown very fine sandy loam. The middle part is dark brown loam. The lower part is brown very fine sandy loam. The underlying material to a depth of about 70 inches is grayish brown and brown silt loam and very fine sandy loam.

Water and air move through this soil at a moderate rate. Water runs off the surface at a medium rate. Available water capacity is high or very high. Natural

fertility is high. The surface layer is easy to till, but traffic pans tend to form if intensive cultivation is used.

Included in mapping are a few small areas of the somewhat poorly drained Commerce and Convent soils. These soils are in positions similar to or slightly lower than Bruin soils. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to this Bruin soil except that they are underlain by reddish loamy material. The included soils make up about 10 percent of the map unit.

Most of the acreage of this Bruin soil is used for crops. A small acreage is in pasture, woodland, or used for homesites.

This soil is well suited to cultivated crops, mainly corn, sugarcane, soybeans, and small grain. Chiseling or subsoiling helps to break up traffic pans. Returning crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility and tilth.

This soil is well suited to pasture. The main concerns in management are maintaining soil tilth and fertility. Suitable pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, bahiagrass, ryegrass, and johnsongrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to the commercial production of trees. Only a few areas remain in native hardwoods. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is well suited to urban uses. Moderate permeability of the subsoil is a limitation for septic tank absorption fields. This can be overcome by increasing the size of the absorption fields.

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

**Br—Bruin very fine sandy loam, gently undulating.** This is a moderately well drained soil on low convex ridges and in the highest positions on natural levees. Slopes range from 0 to 3 percent.

Typically, the surface layer is grayish brown and brown very fine sandy loam about 8 inches thick. The upper part of the subsoil is brown loam, and the lower part is brown very fine sandy loam. The underlying material to a depth of about 60 inches is brown loam in the upper part and dark gray silty clay loam in the lower part.

Water and air move through this soil at a moderate rate. Surface runoff is medium. Available water capacity is high or very high. This soil is high in natural fertility. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface, however, crusts or puddles after heavy rainfall. Roots penetrate the subsoil without difficulty.

Included in mapping are a few small areas of Convent and Mhoon soils. Some areas of the somewhat poorly drained Convent soils are at an elevation similar to Bruin soils, and some areas are on low ridges. The poorly drained Mhoon soils are in lower positions. Also included are a few small areas of a soil similar to this Bruin soil except that it is reddish in the lower part. The included soils make up less than 10 percent of the map unit.

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

This soil is well suited to crops, mainly corn, soybeans, small grain, sugarcane, and cotton. Controlling erosion and maintaining tilth and fertility are the main concerns in management. Returning crop residue to the soil reduces runoff and helps to maintain tilth and organic matter content. Crusting of the surface and compaction can be reduced by returning crop residue to the soil.

This soil is well suited to pasture. Maintaining tilth and fertility and controlling erosion during seedbed preparation are the main concerns in management. Suitable pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, bahiagrass, ryegrass, johnsongrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. Some areas remain in native hardwoods. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is controlled or removed.

This soil is well suited to urban uses. Moderate permeability in the subsoil is a limitation for septic tank absorption fields. This can be overcome by increasing the size of the absorption area. Revegetating disturbed areas around construction sites as soon as possible helps to control soil erosion.

This Bruin soil is in capability subclass IIe and woodland group 1o4.

**Ce—Commerce silt loam.** This is a level, somewhat poorly drained soil in high positions on the natural levees of the Atchafalaya and Mississippi Rivers and their distributaries. Slope is dominantly less than 1 percent.

Typically, the surface layer is grayish brown silt loam about 4 inches thick. The subsoil is dark grayish brown loam or silt loam. The underlying material to a depth of about 71 inches is silty clay loam. This material is dark grayish brown in the upper part and gray in the lower part.

Water and air move through this soil at a moderately slow rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. This soil is high in natural fertility. A high water table fluctuates between depths of 1 1/2 and 4 feet from December to April. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface, however, crusts or puddles after heavy rainfall. The shrink-swell potential is moderate in the subsoil and underlying material.

Included in mapping are a few small areas of Bruin soils and Commerce silty clay loam. Bruin soils are in higher positions than Commerce soil and Commerce silty clay loam is in lower positions. Bruin soils are moderately well drained and have less clay in the subsoil. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to this Commerce soil except that they are reddish in the lower part. The included soils make up less than 10 percent of the map unit.

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

This soil is well suited to crops, mainly sugarcane, soybeans, small grain, and cotton. Wetness is the main limitation. Proper row arrangement, surface field ditches, and grassed outlets are needed to remove excess surface water. Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces crusting, and increases the water intake rate. Periodic chiseling or subsoiling helps to eliminate trafficpans and improves internal drainage.

This soil is well suited to pasture. Maintaining soil fertility is the main concern in management. Suitable pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, bahiagrass, tall fescue, ryegrass, johnsongrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. Only a few small areas remain in native hardwoods. Wetness moderately limits the use of equipment for planting and harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is moderately well suited to urban uses. Wetness, moderately slow permeability, and moderate shrink-swell potential are the main limitations. Excess water can be removed by using shallow ditches and by providing the proper grade. Buildings and roads should be designed to offset the shrinking and swelling of the soil. Low strength is a limitation for local roads and streets. Roads need to be designed to offset the limited ability of the soil to support a load. Wetness and the moderately slow permeability increase the possibility of failure of septic tank absorption fields.

This Commerce soil is in capability subclass IIw and woodland group Iw5.

**Cm—Commerce silty clay loam.** This is a level, somewhat poorly drained soil in intermediate positions on natural levees of the Mississippi River and its distributaries. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark grayish brown silty clay loam about 10 inches thick. The subsoil is mottled, dark grayish brown silty clay loam. The underlying material to a depth of about 60 inches is dark grayish brown silty clay loam.

Water and air move through this soil at a moderately slow rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. A high water table fluctuates between depths of 1 1/2 and 4 feet from December to April. This soil is high in natural fertility. The surface layer is slightly sticky when wet, and it dries slowly. The surface crusts or puddles after heavy rainfall. The shrink-swell potential is moderate.

Included in mapping are a few small areas of Commerce silt loam and Sharkey soils. Commerce silt loam is in higher positions on the landscape. The poorly drained Sharkey soils are in lower positions and have more clay throughout than Commerce soils. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Commerce silty clay loam except that they are reddish in the lower part of the profile. The included soils make up about 10 percent of the map unit.

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

This soil is well suited to crops, mainly sugarcane, soybeans, small grain, and cotton. Surface drainage is needed, however, and excessive cultivation tends to result in the formation of a tillagepan. This pan can be broken by subsoiling. Returning crop residue to the soil or adding other organic matter improves fertility, reduces crusting, and increases the water intake rate.

This soil is well suited to pasture (fig. 1). The main concerns in management are maintaining soil tilth and fertility. The suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, dallisgrass, ryegrass, johnsongrass, tall fescue, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of hardwood trees. A few small areas remain in native hardwoods. Wetness moderately limits the use of equipment for planting and harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is moderately well suited to urban uses. Wetness, moderately slow permeability, and moderate shrink-swell potential are the main limitations. Septic tank absorption fields do not function properly during rainy periods because of wetness and moderately slow permeability. Buildings and roads need to be designed to offset the shrinking and swelling of the soil. Low strength is a limitation for local roads and streets.

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

**Co—Commerce silty clay loam, gently undulating.** This is a gently undulating, somewhat poorly drained soil in intermediate positions on the natural levees of the

*Figure 1.—An area of native grass pasture on Commerce silty clay loam.*

Mississippi River and its distributaries. This soil is on low, parallel ridges and in swales. Slopes range from 0 to 3 percent.

Typically, the surface layer is dark grayish brown silty clay loam about 5 inches thick. The upper part of the subsoil is grayish brown silty clay loam. The middle part is mottled grayish brown loam. The lower part is grayish brown loam that has red mottles. The underlying material to a depth of about 60 inches is grayish brown silty clay loam.

Water and air move through this soil at a moderately slow rate. Water runs off the surface at a medium or slow rate. Available water capacity is high or very high. A high water table fluctuates between depths of about 1 1/2 and 4 feet from December to April. This soil is high in natural fertility. The surface layer is friable and is easy to till, but a crust tends to form after heavy rainfall. The shrink-swell potential is moderate.

Included in mapping are a few small areas of Commerce silt loam and Sharkey soils. Commerce silt loam is in higher positions on the landscape, and poorly drained Sharkey soils are in the lowest positions. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Commerce soils except that they are reddish in the lower part of the profile. The included soils make up about 10 percent of the map unit.

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

This soil is well suited to cultivated crops, mainly sugarcane, soybeans, small grain, and cotton. Wetness is the main limitation. Maintaining tilth and fertility and controlling soil erosion on the more sloping soils are concerns in management. Land smoothing improves surface drainage, but in places large amounts of soil will need to be moved. Returning crop residue to the soil improves fertility, reduces crusting, and helps to maintain tilth.

This soil is well suited to pasture. Reducing wetness and maintaining tilth and fertility are the main concerns in management. Grasses and legumes grow well if adequate fertilizer is used. Suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, ryegrass, dallisgrass, johnsongrass, tall fescue, and white clover. The grazing of livestock when the soil is wet causes compaction of the surface layer, poor tilth, and excessive runoff. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of hardwood trees. A few areas remain in native hardwoods. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling. Conventional methods of harvesting timber generally are suitable. If the soil is wet, harvesting with heavy equipment can result in compaction.

This soil is moderately well suited to urban uses. It has moderate limitations for building sites and severe limitations for most sanitary facilities. Septic tank absorption fields do not function properly during rainy periods because of wetness and moderately slow permeability. Buildings and roads need to be designed to prevent structural damage caused by shrinking and swelling of the soil. Low strength is a limitation for local roads and streets. Roads should be designed to offset the limited ability of the soil to support a load. Surface drainage reduces wetness.

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

**Cp—Commerce silty clay loam, occasionally flooded.** This is a level, somewhat poorly drained soil in intermediate positions on natural levees of the Mississippi River and its distributaries. This soil is subject to occasional flooding for brief to long periods (fig. 2). Slope is dominantly less than 1 percent.

Typically, the surface layer is dark grayish brown silty clay loam about 5 inches thick. The subsoil and underlying material are mottled, grayish brown silty clay loam.

Water and air move through this soil at a moderately slow rate. Water runs off the surface at a slow rate. This soil is subject to flooding from local streams for brief to long periods from December through June. A high water table fluctuates between depths of about 1 1/2 and 4 feet from December to April. This soil is high in natural fertility. Available water capacity is high or very high. The surface layer generally is friable and is easy to till, but a crust forms on the surface after heavy rainfall. The shrink-swell potential is moderate.

Included in mapping are a few small areas of Commerce silt loam and Sharkey soils. Commerce silt loam is in slightly higher positions on the landscape. The poorly drained Sharkey soils are in low positions. The included soils make up about 15 percent of the map unit.

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

This soil is moderately suited to cultivated crops, mainly soybeans. Wetness from flooding and a seasonal high water table are the main limitations. Flooding can be controlled by large flood control structures, such as earthen levees. Land grading and surface field ditches improve surface drainage and lower the water table. Using conservation tillage and returning crop residue to the soil improve fertility and help to maintain tilth. Periodic chiseling or subsoiling helps to eliminate trafficpans and to improve internal soil drainage.

This soil is well suited to pasture. Wetness from flooding is the main limitation. Suitable pasture plants are dallisgrass, tall fescue, johnsongrass, bahiagrass,

*Figure 2.—Flooding on Commerce silty clay loam, occasionally flooded.*

ryegrass, white clover, and common bermudagrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. A few small areas remain in native hardwoods. The main limitations to producing and harvesting trees are occasional flooding, wetness, and moderately slow permeability. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling. Planting and harvesting operations can be accomplished during dry periods.

This soil is poorly suited to urban uses. Wetness from flooding and a seasonal high water table are the main limitations. In addition, local roads and streets are limited by low strength and should be placed above the expected flood level. Drainage and protection from flooding are needed if this soil is used for building sites or sanitary facilities.

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

**CR—Commerce soils, occasionally flooded.** These are level, somewhat poorly drained soils in intermediate and high positions on natural levees within the Morganza Floodway. The map unit consists of Commerce soils, which have a surface layer of silt loam or silty clay loam, and soils that are similar to Commerce soils except that they are less clayey throughout, are better drained, and are reddish in the lower part. The soils are not in a regular pattern on the landscape but occur in several large areas. Individual areas are large enough to have been mapped separately, but because of present and predicted use of the soils they were mapped as one unit. When the floodway is used to carry excess floodwaters of the Mississippi River, these soils are subject to scouring and deposition. Elevation ranges from 15 to 30 feet above sea level. Slopes are mainly less than 1 percent.

Typically, Commerce soils have a mottled, dark grayish brown silt loam or silty clay loam surface layer about 7 inches thick. The layer below that is mottled, dark grayish brown silt loam. The underlying material to a depth of about 60 inches is grayish brown silty clay loam.

Commerce soils are high in natural fertility. Water and air move at a moderate rate through the soil. The available water capacity is high or very high. The water table fluctuates between depths of 1 1/2 and 4 feet from December through April. These soils are flooded for brief to long periods when the Morganza Floodway is used to carry excess floodwaters of the Mississippi River. The floodwaters are 1 foot to 2 feet deep. The shrink-swell potential is moderate.

Included in mapping are many medium and large areas of Convent and Sharkey soils and areas of soils similar to these Commerce soils that are more acid throughout and that have a more strongly developed subsoil. Convent soils and the similar Commerce soils are in higher positions along the stream channels. The poorly drained Sharkey soils are in lower positions on natural levees and in depressional areas. The included soils make up about 25 percent of the map unit.

Most of the acreage of the Commerce soils map unit is in woodland. A small acreage is in pasture and cultivated crops.

These soils are well suited to the commercial production of hardwood trees, including eastern cottonwood, American sycamore, green ash, and cherrybark oak. The main concern in producing and harvesting timber is wetness from flooding, which can delay harvesting. Reforestation after harvesting needs to be carefully managed to reduce competition from undesirable understory plants.

In most years, these soils are moderately well suited to crops, mainly soybeans. However, flooding late in spring or in summer can damage crops in some years. The surface layer of these soils is friable and is easy to keep in good tilth. The soils can be worked within a wide range of moisture content. Trafficpans develop easily, but they can be broken up by deep plowing or chiseling. Using conservation tillage and returning crop residue to the soil improve fertility and help to maintain tilth and content of organic matter.

These soils are well suited to pasture. Wetness from flooding and a seasonal high water table are the main limitations. Suitable pasture plants are common bermudagrass and bahiagrass. The grazing of livestock when the soil is wet causes some compaction of the surface layer and damages plants. During flood periods, cattle need to be moved to adjacent protected areas or to pastures at a higher elevation. Pasture plants respond to nitrogen fertilizer, but lime or other fertilizers generally are not needed.

The soils are not suited to urban uses. Flooding is the main hazard.

These Commerce soils are in capability subclass IIIw and woodland group 1w5.

**Ct—Convent silt loam.** This is a level, somewhat poorly drained soil in high positions on natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. Areas are long and narrow. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark grayish brown silt loam about 8 inches thick. The underlying material to a depth of about 60 inches is mottled, grayish brown very fine sandy loam, silt loam, and silty clay loam.

Water and air move through this soil at a moderate rate. Water runs off the surface at a slow rate. A high water table fluctuates between depths of 1 1/2 and 4 feet from December through April. Available water capacity is high or very high. This soil is high in natural fertility. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface,

however, tends to crust or puddle after heavy rainfall. Trafficpans form easily.

Included in mapping are a few small areas of Commerce and Mhoon soils. These soils are in lower positions and have more clay throughout than this Convent soil. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to this Convent soil except that they are reddish in the lower part. The included soils make up about 10 percent of the map unit.

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

This soil is well suited to cultivated crops, mainly sugarcane, corn, and soybeans. Wetness is the main limitation. Excessive cultivation tends to result in the formation of a tillagepan. This pan can be broken by subsoiling. Returning crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility and tilth. Land smoothing helps to remove excess surface water.

This soil is well suited to pasture. Wetness is the main limitation. Pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, ryegrass, johnsongrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. Only a few areas remain in native hardwoods. Wetness moderately limits the use of equipment for planting and harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during proper site preparation or controlled by spraying, cutting, or girdling.

This soil is moderately suited to urban use. Wetness is the main limitation. The soil is moderately suited to building sites and poorly suited to onsite waste disposal. Wetness can be offset by providing drainage. In addition, the size of septic tank absorption fields should be increased.

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

**CV—Convent soils, occasionally flooded.** These are nearly level, somewhat poorly drained soils on flood plains within the Morganza Floodway. These soils are in the highest positions on natural levees along the Atchafalaya River and its distributaries. The map unit consists of Convent soils, which have a surface layer of silt loam or silty clay loam, and soils that are similar to Convent soils except that they have more sand throughout and are reddish in the lower part of the profile. The soils are not in a regular pattern on the landscape but occur in several large areas. Individual areas are large enough to have been mapped separately, but because of present and predicted use of the soils they were mapped as one unit. When the floodway is used to carry excess floodwaters of the Mississippi River, the soils are subject to scouring and deposition. Elevation ranges from 15 to 30 feet above sea level. Slopes range from 0 to 2 percent.

Typically, Convent soils have a mottled, dark grayish brown silt loam or silty clay loam surface layer about 8 inches thick. The underlying material to a depth of about 60 inches is mottled, grayish brown silt loam.

The Convent soils are high in natural fertility. Water and air move through these soils at a moderate rate. Available water capacity is high or very high. A high water table fluctuates between depths of 1 1/2 and 4 feet from December through April. These soils are flooded for brief to long periods when the floodway is used to carry excess floodwaters of the Mississippi River. The floodwaters are 1 foot to 2 feet deep.

Included in mapping are many small to large areas of Commerce soils, Sharkey soils, and soils that are similar to Convent soils but that are more acid throughout the profile. These similar soils are adjacent to the stream channels. Commerce soils are in slightly lower positions on the landscape than Convent soil, and the poorly drained Sharkey soils are in the lowest positions. The included soils make up about 25 percent of the map unit.

Most of the acreage of these Convent soils is in woodland. A small acreage is in pasture or cultivated crops.

These soils are well suited to the commercial production of hardwood trees. Suitable trees to plant are eastern cottonwood, American sycamore, green ash, and cherrybark oak. Wetness from flooding, which often delays harvesting of timber, is the main limitation. Reforestation after harvesting needs to be carefully managed to reduce competition from undesirable understory plants.

These soils are moderately well suited to crops and can be cultivated in most years. Soybeans is the main crop. Flooding late in spring damages crops in some years. The surface layer of these soils is friable and is easy to keep in good tilth. The soils can be worked through a wide range of moisture content. Trafficpans develop easily, but they can be broken up by deep plowing or chiseling. Flooding cannot be prevented. Using conservation tillage and returning crop residue to the soil improve fertility and help to maintain tilth and content of organic matter.

These soils are well suited to pasture. Wetness from flooding and a seasonal high water table are the main limitations. Suitable pasture plants are common bermudagrass and bahiagrass. The grazing of livestock when the soil is wet causes some compaction of the surface layer and damages plants. During flood periods, cattle need to be moved to protected areas or to pastures at a higher elevation. Pasture plants respond to nitrogen fertilizer, but lime or other fertilizers generally are not needed.

These soils are poorly suited to urban uses. Flooding is the main hazard.

These soils are in capability subclass IIIw and woodland group 1w5.

**De—Dundee-Alligator complex, undulating.** This complex consists of Dundee and Alligator soils on low, parallel ridges and in swales on False River Island in the Grand Swamp area. The ridges are 2 to 5 feet high, and the swales are 50 to 300 feet wide. The Dundee soil is somewhat poorly drained. It is on the ridges and makes up about 50 percent of the complex. The Alligator soil is poorly drained. It is in the swales and makes up about 40 percent of the complex. Slopes range from 0 to 5 percent.

Typically, the Dundee soil has a surface layer of very dark grayish brown silty clay loam about 4 inches thick. The upper part of the subsoil is mottled, grayish brown clay loam, and the lower part is mottled, light brownish gray loam. The underlying material to a depth of about 60 inches is mottled, light brownish gray loam.

Permeability in the Dundee soil is moderately slow. Water runs off the surface at a slow to medium rate. Available water capacity is high. This soil is medium in natural fertility. A high water table fluctuates between depths of about 1 1/2 and 3 1/2 feet from January to April. The surface layer is friable and is easily tilled if the moisture content is adequate. The surface, however, crusts or puddles after heavy rainfall. The shrink-swell potential is moderate in the subsoil.

Typically, the Alligator soil has a surface layer of dark gray clay about 8 inches thick. The subsoil is mottled, gray clay. The underlying material to a depth of about 73 inches is light grayish brown silty clay loam.

Permeability of the Alligator soil is very slow. Water runs off the surface at a very slow rate. Available water capacity is moderate or high. A high water table fluctuates between depths of about 1/2 foot and 2 feet from January to April. This soil is medium in natural fertility. The surface layer is firm and is difficult to till. This soil dries slowly. The shrink-swell potential is very high.

Included in mapping are a few small areas of Bruin and Sharkey soils. Bruin soils are in the highest, convex positions and have less clay throughout than Dundee and Alligator soils. The poorly drained Sharkey soils are in swales. The included soils make up about 15 percent of the map unit.

Most of the acreage of this Dundee-Alligator complex is in pasture. A small acreage is in cultivated crops and in woodland.

These soils are moderately well suited to crops, mainly soybeans and small grain. Wetness is the main limitation. Erosion is a slight hazard on the Dundee soil. Poor tilth is a concern in the clayey Alligator soil. Drainage generally is needed if cultivated crops are grown. Returning crop residue to the soil helps to maintain tilth, control erosion, and reduce crusting of the surface.

These soils are well suited to pasture. Wetness and the clayey texture are the main limitations. Suitable pasture plants are common bermudagrass, dallisgrass, bahiagrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition. Surface field ditches help remove excess surface water. Fertilizer and lime are needed for grasses and legumes.

These soils are well suited to the commercial production of hardwood trees, including eastern cottonwood, cherrybark oak, sweetgum, water oak, and yellow-poplar. Wetness is the main limitation. Drainage on the Alligator soil is needed for germination of tree seeds. Drainage also helps in harvesting operations.

These soils are moderately well suited or poorly suited to urban uses. Wetness and the moderate to very high shrink-swell potential are the main limitations. The Dundee soil is better suited to use as building sites than the Alligator soil. Buildings need to be designed to prevent structural damage that could be caused by wetness and the shrinking and swelling of the soils. The Alligator soil is better suited to sewage lagoons than the Dundee soil. Low strength is a limitation to local roads and streets. The upper layers of the Alligator soil need to be replaced or covered with a suitable base material to minimize maintenance requirements if the soils are used for local roads and streets.

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

**Fa—Fausse clay, frequently flooded.** This is a level, very poorly drained soil in backswamps within broad depressional areas. Most areas are frequently flooded and remain ponded for long periods. Areas are irregular in shape and range from several hundred to several thousand acres in size. Slopes are dominantly less than 0.5 percent.

Typically, the surface layer is dark gray clay about 10 inches thick. The upper part of the subsoil is mottled, gray clay. The lower part is gray and dark greenish gray clay. The underlying material to a depth of about 60 inches is mottled, gray clay.

Water and air move through this soil at a very slow rate. This soil is flooded one or more times each year from December through July. In some of the lower parts of the map unit the floodwaters can be more than 20 feet deep. Some depressional areas are ponded most of the time. The shrink-swell potential is very high. This soil is high in natural fertility.

Included in mapping are a few small areas of Commerce, Convent, and Sharkey soils. All of these soils are at a higher elevation than the Fausse soil, and they are better drained. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to the Fausse soil except that they are reddish in the lower part of the profile. The included soils make up about 25 percent of the map unit.

Most of the acreage of this Fausse soil is in woodland. The area is used mainly for commercial crawfishing and

recreation and as habitat for wetland wildlife. A small acreage is used for oil and gas production.

This soil is not suited to cultivated crops or pasture because of ponding. It is poorly suited to use as woodland. Common trees in the area include baldcypress, black willow, green ash, honeylocust, sweetgum, water elm, water hickory, water locust, and water tupelo. Woodland management is difficult because of the long periods of ponding.

This soil provides good natural habitat for many kinds of wetland wildlife (fig. 3). The habitat can be improved if level ditches are constructed to provide open water areas.

This soil is not suited to urban uses. Flooding is the principal hazard.

This Fausse soil is in capability subclass VIIw and woodland group 4w6.

**FS—Fausse soils, frequently flooded.** These are level, very poorly drained soils in backswamps within the Morganza Floodway. The map unit consists of Fausse soils, which have a surface layer of clay or muck, and soils that are similar to Fausse soils except that they have layers of reddish gray clay in the subsoil. The soils are not in a regular pattern on the landscape but occur in individual areas of several hundred acres. They are large enough to have been mapped separately, but because of present and predicted uses of the soil they were mapped as one unit. These soils are ponded most of the time. Elevation ranges from about 20 feet above sea level to less than 15 feet. Slopes are less than 0.5 percent.

Typically, Fausse soils have a surface layer of very dark gray clay or muck about 3 inches thick. The subsoil is mottled, gray clay. The underlying material to a depth of about 60 inches is gray clay.

Water and air move very slowly through these soils. The soils are ponded most of the time. In addition, they are generally flooded one or more times each year. In the lower part of the map unit the floodwaters can be more than 20 feet deep. During dry periods, the water table is as low as 1 1/2 feet below the surface. These soils have very high shrink-swell potential, but they are seldom dry enough to crack. Natural fertility is high.

Included in mapping are many small areas of Convent and Sharkey soils. Both soils are at a slightly higher

*Figure 3.—Fausse clay, frequently flooded, provides excellent habitat for wetland wildlife.*

elevation than the Fausse soils, and they are better drained. Individual areas of included soils generally are less than 50 acres. The included soils make up 15 to 25 percent of a map unit.

Most of the acreage of these Fausse soils is in woodland. Areas are used mostly for recreation and as habitat for wetland wildlife. Common trees in the area include baldcypress, black willow, green ash, honeylocust, pumpkin ash, water elm, water hickory, water locust, and water tupelo.

These soils are not suited to cropland or pasture because of ponding. They are poorly suited to use as woodland. Management of woodland is difficult because of the long periods of ponding. These soils provide good natural habitat for many kinds of wetland wildlife.

The soils are not suitable for urban uses. Flooding is the principal hazard.

These Fausse soils are in capability subclass VIIw and woodland group 4w6.

**Mh—Mhoon silty clay loam.** This is a poorly drained, level soil in high and intermediate positions on natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark gray silty clay loam about 6 inches thick. The subsoil is gray and dark gray silty clay loam. The underlying material to a depth of about 60 inches is mottled, gray silty clay loam.

Water and air move through this soil at a slow rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. A high water table fluctuates between the surface and a depth of 3 feet from December to April. This soil is medium in natural fertility. The surface layer is slightly sticky when wet. In addition, it crusts or puddles after heavy rainfall. The shrink-swell potential is moderate.

Included in mapping are a few small areas of Commerce and Sharkey soils. The somewhat poorly drained Commerce soils are in positions on the landscape similar to Mhoon soils. Sharkey soils are clayey throughout and are in lower positions. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Mhoon soils except that they are reddish in the lower part of the profile. The included soils make up about 10 percent of the map unit.

Most of the acreage of this Mhoon soil is used for crops. A small acreage is in pasture and woodland.

This soil is well suited to cultivated crops, mainly cotton, soybeans, sugarcane, rice, and corn. Wetness is the main limitation. Excessive cultivation can result in the formation of a tillage pan. This pan can be broken by subsoiling. Land smoothing helps to remove excess water. Returning crop residue to the soil or adding other organic matter improves fertility, reduces crusting, and improves tilth.

This soil is well suited to pasture. Providing surface drainage, preventing overgrazing, and maintaining tilth are the main concerns in management. The main suitable pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, johnsongrass, bahiagrass, ryegrass, tall fescue, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. Wetness severely limits the use of equipment for planting or harvesting trees. Seedling mortality is moderate, but tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is controlled or removed. Proper site preparation or spraying, cutting, or girdling control competing vegetation.

This soil is poorly suited to urban uses. Wetness and slow permeability are the main limitations. Surface drainage is needed to remove excess water. Unless the soil is drained, septic tank absorption fields do not function properly because of wetness and slow permeability. Roads should be designed to offset the limited ability of the soil to support a load.

This Mhoon soil is in capability subclass IIw and woodland group 1w6.

**Nd—Norwood silt loam.** This is a level, well drained soil in high positions on natural levees mainly along the Atchafalaya River. Slopes are dominantly less than 1 percent.

Typically, the surface layer is silt loam about 11 inches thick. The upper part is reddish brown, and the lower part is yellowish red. The subsoil is yellowish red and reddish brown silt loam and silty clay loam. The underlying material to a depth of about 60 inches is reddish brown and yellowish red silt loam and silty clay loam.

Water and air move through this soil at a moderate rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. This soil is high in natural fertility. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface crusts or puddles after heavy rainfall. Trafficpans form easily.

Included in mapping are a few small areas of Commerce and Sterlington soils. Commerce soils are somewhat poorly drained, and Sterlington soils are more acid throughout. The included soils make up about 10 to 15 percent of the map unit.

Most of the acreage of this Norwood soil is used for crops. A small acreage is in pasture and woodland.

This soil is well suited to cultivated crops, mainly cotton, soybeans, and sorghum. Excessive cultivation can result in the formation of a tillage pan. This pan can be broken by subsoiling. Returning crop residue to the soil or adding other organic matter improves fertility, reduces crusting, and increases the water intake rate.

This soil is well suited to pasture. Suitable pasture plants are common bermudagrass, improved bermudagrass, dallisgrass, bahiagrass, ryegrass, and

johnsongrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition. Fertilizer is needed for grasses and legumes.

This soil is well suited to woodland. A few small areas remain in native hardwoods. There are no limitations or hazards for planting or harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is moderately well suited to urban uses. The moderate permeability is a limitation for septic tank absorption fields. This limitation can be offset by increasing the size of the absorption field. Excessive seepage from sewage lagoons can be prevented by sealing the bottom of the lagoon. Low strength is a limitation where this soil is used for local roads and streets.

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

**RE—Robinsonville and Commerce soils, occasionally flooded.** These are nearly level to gently undulating, well drained Robinsonville soils and somewhat poorly drained Commerce soils in high and intermediate positions on natural levees along the Mississippi and Atchafalaya Rivers. The soils are in long and narrow areas between the river channels and the protection levees. The Robinsonville soils are on low, convex ridges, and the Commerce soils are in shallow swales. Slopes are 0 to 3 percent. These soils are subject to occasional flooding for brief to long periods and to scouring and deposition.

The Robinsonville soils make up about 60 percent of the map unit, and the Commerce soils make up about 30 percent. Most mapped areas are made up of both soils, but the proportion of each soil varies from place to place.

Typically, the surface layer of Robinsonville soils is dark grayish brown silt loam or fine sandy loam about 6 inches thick. The underlying material to a depth of about 60 inches is stratified, brown and pale brown very fine sandy loam, loam, and loamy very fine sand.

Water and air move through the Robinsonville soils at a moderate or moderately rapid rate. Surface runoff is slow or medium. Available water capacity is moderate or high. The high water table is at a depth of 4 to 6 feet from January to April. The surface layer is friable and is easily tilled within a wide range in moisture content, but it tends to crust or puddle after heavy rainfall.

Typically, the surface layer of the Commerce soils is dark grayish brown silt loam or silty clay loam about 7 inches thick. The subsoil is silt loam. It is dark grayish brown in the upper part and grayish brown in the lower part. The underlying material to a depth of about 60 inches is grayish brown silty clay loam.

Water and air move through the Commerce soils at a moderately slow rate. Surface runoff is slow. Available water capacity is high or very high. The high water table fluctuates between depths of about 1 1/2 and 4 feet from December to April. Commerce soils are high in natural fertility. The surface layer is friable and is easily tilled within a wide range in moisture content, but it tends to crust or puddle after heavy rainfall, especially in areas where the subsoil material is part of the plow layer. The shrink-swell potential is moderate in the subsoil and underlying material.

Included in mapping are a few small areas of Convent soils in positions on the landscape similar to the Commerce soils. Also included, in lower positions, are a few areas of Commerce soils that are flooded frequently and are subject to deposition and scouring. The included soils make up 10 percent of the map unit.

Most of the acreage of these Robinsonville and Commerce soils is in native pasture. A small acreage is in cultivated crops.

These soils are well suited to pasture. Wetness caused by flooding is the main hazard. Suitable pasture plants are common bermudagrass, bahiagrass, tall fescue, ryegrass, johnsongrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition. During flood periods, cattle need to be moved to protected areas or to pasture at a higher elevation.

These soils are moderately suited to mainly short-season crops, such as soybeans, millet, and grain sorghum. Crops are damaged by flooding late in spring or in summer in some years. A drainage system is not practical on these soils because the soils are on the unprotected side of the levees and are subject to occasional flooding.

The soils are well suited to the commercial production of hardwood trees, including eastern cottonwood, American sycamore, sweetgum, green ash, and cherrybark oak. Wetness somewhat limits the use of equipment. Reforestation after harvesting needs to be carefully managed to reduce competition from undesirable understory plants.

The soils are poorly suited to urban uses because of the hazard of flooding. There is no feasible way to protect these areas from flooding.

Robinsonville and Commerce soils are in capability subclass IIIw. Robinsonville soils are in woodland group 1o4, and Commerce soils are in woodland group 1w5.

**Se—Sharkey silty clay loam.** This is a level, poorly drained soil mainly in intermediate and low positions on natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. Slopes are dominantly less than 1 percent.

Typically, the surface layer is dark grayish brown silty clay loam about 6 inches thick. The subsoil is gray clay. Below this is a buried surface layer of very dark gray clay. The underlying material to a depth of about 60 inches is gray clay.

Water and air move through this soil at a very slow rate. Water runs off the surface at a slow or very slow rate. Available water capacity is high or very high. This soil is high in natural fertility. A high water table fluctuates between the surface and a depth of 2 feet from December to April. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface tends to crust or puddle after heavy rainfall. Root development is somewhat restricted because of wetness and the clayey texture of the soil. Deep cracks form in the soil during dry periods and close during wet periods. The shrink-swell potential is very high.

Included in mapping are a few small areas of Mhoon, Sharkey clay, and Tunica soils in positions similar to this Sharkey soil. Mhoon soils have less clay in the subsoil. Sharkey clay soils have a more clayey surface layer. Tunica soils are underlain by loamy sediment. Also included, in the northern part of Pointe Coupee Parish, are areas of soils that are similar to Sharkey soils except that they are reddish in the lower part. The included soils make up about 10 percent of the map unit.

Most of the acreage of this Sharkey soil is farmed. A small acreage is in pasture and woodland.

This soil is moderately suited to cultivated crops, mainly soybeans, corn, rice, and sugarcane. Wetness and poor tilth are the main limitations. A drainage system is needed for most cultivated crops and pasture plants. Returning crop residue to the soil or adding other organic matter improves fertility, reduces crusting, and helps to maintain tilth.

This soil is well suited to pasture. Wetness, surface compaction, and poor tilth are the main limitations and management concerns. Suitable pasture plants are common bermudagrass, dallisgrass, johnsongrass, bahiagrass, ryegrass, tall fescue, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition. Fertilizer is needed for grasses and legumes.

This soil is well suited to the commercial production of trees. A few areas remain in native hardwoods. Suitable trees to plant are eastern cottonwood, American sycamore, and sweetgum. Wetness and poor tilth are the main concerns in producing and harvesting timber. Limited use of equipment is a concern unless drainage is provided. Seedling mortality is a limitation unless competing vegetation is removed in site preparation or controlled by spraying, cutting, or girdling.

This soil is poorly suited to urban uses. Wetness, very slow permeability, and very high shrink-swell potential are the main limitations. Low strength is a limitation to local roads and streets. Drainage is needed if roads and buildings are constructed. Buildings and roads should be designed to offset the effects of the shrinking and swelling of the soil. In addition, roads should be designed to offset the limited ability of the soil to support a load. Septic tank absorption fields do not function properly in this soil during rainy periods because of wetness and very slow permeability. This limitation can be corrected by surface drainage to remove excess water and by using sandy backfill in the trench and installing long absorption lines to compensate for the very slow permeability.

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

**Sf—Sharkey clay.** This is a level, poorly drained soil in intermediate and lower positions of natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark gray clay about 11 inches thick. The subsoil is mottled, gray and dark gray clay. The underlying material to a depth of about 60 inches is mottled, gray clay.

Water and air move through this soil at a very slow rate. Water runs off the surface at a slow or very slow rate. Available water capacity is high or very high. The high water table fluctuates between the surface and a depth of about 2 feet from December to April. This soil is high in natural fertility. The surface layer is firm and is difficult to till. This soil can be cultivated only within a narrow range of moisture content. This soil dries out slowly. Deep cracks form in the soil during dry periods and close during wet periods. Root development is somewhat restricted because of wetness and the clayey texture. The shrink-swell potential is very high.

Included in mapping are a few small areas of Commerce soils and Mhoon soils. These soils are at a slightly higher elevation than Sharkey soils and have less clay throughout. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Sharkey soils except that they are reddish in the lower part of the profile. The included soils make up 5 to 10 percent of the unit.

Most of the acreage of this Sharkey soil is used for cultivated crops or pasture. A small acreage is in native woodland.

This soil is well suited to pasture. The main limitations are wetness and the clayey texture. Suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, ryegrass, tall fescue, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is moderately well suited to cultivated crops, mainly rice, sugarcane, corn, and soybeans. Wetness and poor tilth are the main limitations. Drainage is needed for most cultivated crops. Land smoothing helps to remove excess surface water. Returning crop residue to the soil or adding other organic matter improves the fertility and helps to maintain tilth.

This soil is well suited to the commercial production of trees, mainly eastern cottonwood, American sycamore, and sweetgum. A few areas remain in native hardwoods (fig. 4). Wetness and the clayey surface layer are the main limitations. Trafficability is poor during rainy periods.

*Figure 4.—Native hardwoods on Sharkey clay. This soil is well suited to woodland.*

Seedling mortality is moderate. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spreading, cutting, or girdling. The selection of proper species is also important.

This soil is poorly suited to urban uses. Wetness, very slow permeability, and very high shrink-swell potential are the main limitations. Low strength is a limitation for local roads and streets. Drainage is needed if roads and buildings are constructed. Buildings and roads need to be designed to offset the effects of the shrinking and swelling of the soil. Because of wetness and the very slow permeability, septic tank absorption fields do not function properly during rainy periods.

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

**Sh—Sharkey clay, occasionally flooded.** This is a level, poorly drained soil on flood plains. The soil is in intermediate and lower positions on natural levees, in broad flats, and in concave swales. This soil is flooded occasionally by overflow from local drainageways and runoff from adjacent, higher lying soils. Slope is dominantly less than 1 percent.

Typically, the surface layer is very dark grayish brown clay about 6 inches thick. The subsoil and underlying material are mottled, very dark gray clay.

Water and air move through this soil at a very slow rate. Water runs off the surface at a slow or very slow rate. Available water capacity is high or very high. This soil is high in natural fertility. Flooding for short to very long periods occurs during December through June. The high water table fluctuates between the surface and a depth of about 2 feet from December to April. This soil dries very slowly. The shrink-swell potential is very high.

Included in mapping are a few small areas of Mhoon and Tunica soils. These soils are in slightly higher positions than those of the Sharkey soil. Mhoon soils are loamy throughout. Tunica soils are underlain by loamy material. A few small areas of Sharkey soils are on humps and ridges that generally are not flooded. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Sharkey soils except that they are reddish in the lower part. The included soils make up about 5 to 10 percent of the map unit.

Most of the acreage of this Sharkey soil is in native woodland. A small acreage is in pasture or used for cultivated crops.

This soil is moderately well suited to the commercial production of trees. Suitable trees to plant are eastern cottonwood and sweetgum. Wetness and occasional flooding are the main limitations and hazards affecting the production and harvesting of trees. Trafficability is poor when the soil is wet. Seedling mortality is severe unless drainage is provided, and competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is well suited to pasture. Wetness from flooding and a seasonal high water table are the main limitations. Suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, tall fescue, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is poorly suited to most cultivated crops. If crops are grown, rice and soybeans are suitable crops for planting. Wetness from a seasonal high water table and flooding are the main limitations. In some years, crops are damaged by floodwater late in spring. Poor tilth is also a problem.

This soil is poorly suited to urban uses. Wetness, flooding, and very high shrink-swell potential are the main hazards and limitations. Low strength is a limitation for local roads and streets. Roads should be raised above the expected flood level and designed to offset the limited ability of the soil to support a load. Drainage and protection from flooding are needed if buildings are constructed on this soil. Septic tank absorption fields do not function properly during rainy periods.

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

**Sk—Sharkey clay, frequently flooded.** This is a level, poorly drained soil in the lowest positions on natural levees and in backswamps that are subject to frequent flooding. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark gray clay about 6 inches thick. The subsoil to a depth of about 60 inches is mottled, dark gray and gray clay.

Water and air move through this soil at a very slow rate. Water runs off the surface at a slow or very slow rate. Available water capacity is high or very high. This soil is high in natural fertility. Wetness causes poor aeration and restricts the root development of many plants. This soil is generally subject to flooding one or more times each year from December through June. Floodwaters can be as much as 2 feet deep. When this soil is not flooded, the water table fluctuates between the surface and a depth of 2 feet. The shrink-swell potential is very high.

Included in mapping are a few small areas of Mhoon and Tunica soils. The Mhoon soils are loamy throughout and are in higher positions on the landscape than Sharkey soil. Tunica soils are underlain by loamy material and are in slightly higher positions. A few small areas of Sharkey soils are on humps and ridges that generally are not flooded. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Sharkey soils except that they are reddish in the lower part. The included soils make up about 5 to 10 percent of the map unit.

Most of the acreage of this Sharkey soil is in native woodland. A small acreage is in pasture.

This soil is moderately suited to the commercial production of trees. Most areas remain in native hardwoods. Common native trees are black willow, common persimmon, Drummond red maple, honeylocust, overcup oak, sweetgum, water hickory, water locust, and water oak. Suitable trees to plant are eastern cottonwood, sweetgum, and American sycamore. Flooding and poor trafficability are the main concerns in producing and harvesting timber. Reforestation after harvesting needs to be carefully managed to improve the chances of seedling survival and to reduce competition from undesirable understory plants.

This soil is poorly suited to pasture. However, some areas of the included soils that are not flooded frequently can be used for grazing. Common bermudagrass is suitable for pasture. During flood periods, cattle need to be moved to protected areas or to pastures at a higher elevation.

This soil is not suited to cultivated crops. Protection from flooding and drainage are needed. Protection from flooding can be accomplished only with major flood control structures, such as dikes and levees.

This soil is not suited to urban uses. The hazard of frequent flooding, wetness, and very high shrink-swell potential are the main limitations. Overcoming these limitations are costly and generally are not feasible. Levee protection and a floodwater pump-off system are needed to control flooding and to provide drainage. Roads should be raised above flood levels and designed to offset the limited ability of the soil to support a load.

This Sharkey soil is in capability subclass Vw and woodland group 3w6.

**Sm—Sharkey-Tunica complex, gently undulating.** This complex consists of gently undulating, poorly drained Sharkey and Tunica soils on low, parallel ridges and in swales on False River Island in the Grand Swamp area. The Sharkey soil is in the swales and makes up about 50 percent of the complex. The Tunica soil is on ridges and makes up about 40 percent of the complex. Slopes range from 0 to 3 percent.

Typically, the Sharkey soil has a surface layer of dark grayish brown clay about 6 inches thick. The subsoil is mottled, gray clay. The underlying material to a depth of about 71 inches is mottled, gray clay. In places the underlying material is silt loam or silty clay loam.

Permeability of the Sharkey soil is very slow. Water runs off the surface at a slow or very slow rate and is ponded in low places for long periods. Available water capacity is high or very high. This soil is high in natural fertility. The high water table fluctuates between the surface and a depth of about 2 feet from December to April. The shrink-swell potential is very high.

Typically, the Tunica soil has a surface layer of dark grayish brown clay. The subsoil is mottled, gray clay. The underlying material to a depth of about 65 inches is grayish brown silt loam and fine sandy loam.

Permeability of the Tunica soil is very slow. Water runs off the surface at a slow rate. Available water capacity is high or very high. The high water table fluctuates between depths of about 1 1/2 and 3 feet from January to April. This soil is high in natural fertility. The shrink-swell potential is high.

Included in mapping are a few small areas of Alligator, Commerce, and Dundee soils. The Alligator soils are in swales and are more acid in the subsoil than Sharkey and Tunica soils. The somewhat poorly drained Commerce and Dundee soils are on higher ridges. The included soils make up about 10 percent of the map unit.

Most of the acreage of this Sharkey-Tunica complex is used for crops. A small acreage is in pasture and woodland.

These soils are moderately well suited to cultivated crops, mainly soybeans and small grain. Wetness and poor tilth are the main limitations. Erosion is a hazard on the Tunica soil. Surface field drainage is needed for most cultivated crops. Returning crop residue to the soil helps to maintain tilth and control erosion.

These soils are well suited to pasture. The main limitations are wetness and the clayey texture. Suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, and white clover. Proper stocking rates,

pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

These soils are well suited to the commercial production of hardwood trees, including cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum, and American sycamore. A few areas remain in native hardwoods. Wetness is the main concern in producing and harvesting timber. Drainage is needed to improve germination and growth of desirable species. The use of equipment is limited unless drainage is provided.

These soils are poorly suited to urban uses. The very slow permeability, high and very high shrink-swell potential, and wetness are the main limitations. In addition, the Sharkey soil is subject to ponding for long periods. Low strength is a limitation for local roads and streets. Roads need to be designed to offset the limited ability of the soil to support a load. The shrinking and swelling of these soils can be minimized by using an engineering design that compensates for the shrinking and swelling and by backfilling with material that has low shrink-swell potential. Drainage is needed if buildings are contructed on these soils. Septic tank absorption fields do not function properly during rainy periods because of wetness and very slow permeability.

Sharkey and Tunica soils are in capability subclass IIIw and woodland group 2w6.

**SN—Sharkey soils, occasionally flooded.** These are level, poorly drained soils on flood plains within the Morganza Floodway. The map unit consists of Sharkey soils, which have a surface layer of clay or silty clay loam, and soils that are similar to Sharkey soils except that they have a less clayey subsoil. The soils are not in a regular pattern on the landscape. Individual areas are large enough to have been mapped separately, but because of present and predicted use of the soils they were mapped as one unit. When the Mississippi River is at flood stage, the floodway gates are opened, and these soils are flooded. They are subject to scouring and deposition. Slope is dominantly less than 1 percent.

Typically, Sharkey soils have a surface layer of dark gray clay or silty clay loam about 4 inches thick. The subsoil and underlying material to a depth of about 60 inches are mottled, dark gray and gray clay. In places the subsoil is silty clay or silty clay loam.

These soils are high in natural fertility. Water runs off the surface at a slow to very slow rate. Water and air move very slowly through the soil. Wetness causes poor aeration and restricts the root development of many plants. The available water capacity is high or very high. If the soils are not flooded, the high water table fluctuates between the surface and a depth of 2 feet from December through April. The surface layer is wet for long periods during these months. These soils generally are subject to flooding for brief to very long periods from December through June. Depth of the floodwaters tends to exceed 5 feet in most areas. These soils have a very high shrink-swell potential. They crack when dry; the cracks close when the soils are wet.

Included in mapping are many areas of Commerce, Fausse, and Tunica soils. Commerce soils are in higher positions than Sharkey soils and are loamy throughout. Fausse soils are in the lowest positions and are ponded most of the time. Tunica soils are in slightly higher positions and have loamy underlying material. Also included are small areas of Sharkey soils, in low positions, that are frequently flooded. Areas of the included soils generally are less than 50 acres. The included soils make up about 25 percent of the map unit.

Most of the acreage of these Sharkey soils are in woodland. A small acreage is used for cultivated crops or pasture.

These soils are moderately suited to the commercial production of hardwood trees. Wetness and the clayey surface layer are the main limitations. Trafficability is poor when the soils are wet. Flooding restricts planting and harvesting operations in most years. Reforestation after harvesting needs to be carefully managed to improve the chances of seedling survival and reduce competition from undesirable understory plants.

These soils are poorly suited to cultivated crops and moderately well suited to pasture. Flooding is the main hazard. Late-planted crops, such as soybeans and grain sorghum, can be grown in most years. Suitable pasture plants are common bermudagrass, Pensacola bahiagrass, and dallisgrass. During flood periods, cattle need to be moved to protected areas or to pastures at a higher elevation.

These soils have good potential for use as habitat for woodland and wetland wildlife. Adequate food and cover for wildlife can be maintained by controlling the harvest of timber.

The soils are not suited to urban uses. Flooding and wetness are limitations. Flooding cannot be controlled or prevented on these soils.

These soils are in capability unit IVw and woodland group 3w6.

**SO—Sharkey soils, frequently flooded.** These are level, poorly drained soils in lower positions on natural levees and in backswamps within the Morganza Floodway. The map unit consists of Sharkey soils, which have a surface layer of clay or silty clay loam, and soils that are similar to Sharkey soils except that they have a less clayey subsoil. The soils are not in a regular pattern on the landscape but occur in individual areas of several hundred acres. They are large enough to have been mapped separately, but because of present and predicted use they were mapped as one unit. These soils are subject to frequent flooding, scouring, and deposition. They are flooded when the Mississippi River is at flood stage and the floodway gates are opened. Slope is less than 1 percent.

Typically, Sharkey soils have a surface layer of mottled, dark gray clay or silty clay loam about 9 inches

thick. The subsoil and underlying material are mottled, dark gray clay. In places the subsoil is silty clay or silty clay loam.

These soils are high in natural fertility. Water runs off the surface at a slow to very slow rate. Water and air move very slowly through the soil. Available water capacity is high or very high. Wetness causes poor aeration and restricts the root development of many plants. These soils are generally subject to flooding one or more times each year from December through June. The floodwaters are from the Morganza Floodway and from higher lying soils. If the soils are not flooded during the winter and spring, the water table fluctuates between the surface and a depth of 2 feet. These soils are wet for long periods. They have very high shrink-swell potential. They crack when dry and close when wet.

Included in mapping are many small to large areas of Commerce, Fausse, and Tunica soils. Commerce soils are in higher positions than Sharkey soils and are loamy throughout. Fausse soils are in the lowest positions and are ponded most of the time. Tunica soils are in slightly higher positions and have loamy underlying material. Areas of the included soils generally are less than 60 acres. The included soils make up about 25 percent of the map unit.

Most of the acreage of these Sharkey soils are in woodland that is used mainly as habitat for wildlife and for recreation. A few small areas at a higher elevation have limited use for grazing.

These soils are not suited to cultivated crops and are poorly suited to pasture. Only pasture plants that can tolerate wetness, such as common bermudagrass, are suitable. During flood periods, cattle need to be moved to protected areas or to pastures at a higher elevation.

These soils are moderately suited to use as woodland. Management is difficult because of wetness from frequent flooding. Suitable trees for planting are eastern cottonwood and sweetgum. The soils have fair potential for use as habitat for woodland and wetland wildlife.

These soils are not suited to urban uses. Flooding and wetness are the main limitations. Control of flooding is not practical.

These Sharkey soils are in capability subclass Vw and woodland group 3w6.

**St—Sterlington silt loam.** This is a level, well drained soil in the highest positions on the natural levees along Bayou Latenache in Pointe Coupee Parish. Areas are irregular in shape and range from 10 to 200 acres. Slope is dominantly less than 1 percent.

Typically, the surface layer is brown silt loam about 13 inches thick. The subsurface is brown very fine sandy loam about 5 inches thick. The subsoil is reddish brown loam. The underlying material to a depth of about 60 inches is dark brown very fine sandy loam.

Water and air move through this soil at a moderate rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. This soil is high in natural fertility. The surface layer is friable and can be easily tilled within a wide range of moisture content. The surface crusts or puddles after heavy rainfall.

Included in mapping are a few small areas of Commerce and Norwood soils. These soils are in positions similar to those of the Sterlington soil. The Commerce soils and Norwood soils have more clay throughout. The included soils make up about 10 percent of the map unit.

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

This soil is well suited to cultivated crops, mainly cotton, corn, soybeans, and small grain. Returning crop residue to the soil reduces runoff, helps to maintain soil tilth and organic matter content, and reduces surface crusting.

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

This soil is well suited to the commercial production of trees. A few small areas remain in native hardwoods. There are few limitations for planting or harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during proper site preparation by prescribed burning or controlled by spraying, cutting, or girdling.

This soil is well suited to urban uses. It has few limitations for local roads and streets and building sites. It has moderate limitations for septic tank absorption fields and sewage lagoons. Seepage of sewage lagoons can be overcome by sealing the bottom of the lagoon. The moderate permeability of septic tank absorption fields can be offset by increasing the size of the absorption field.

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

**Tc—Tunica clay.** This is a level, poorly drained soil on intermediate and low positions of natural levees along the Atchafalaya and Mississippi Rivers and their distributaries. Slope is dominantly less than 1 percent.

Typically, the surface layer is dark gray clay about 4 inches thick. The subsoil is mottled, gray clay and silty clay. The underlying material to a depth of about 60 inches is mottled, gray and grayish brown silt loam and loam.

Water and air move through the upper part of this soil at a very slow rate and through the lower part at a moderate rate. Water runs off the surface at a slow rate. Available water capacity is high or very high. Natural fertility is high. This soil is hard when dry and plastic when wet, and it is difficult to till. Rooting depth is somewhat restricted because of wetness. The high water

table fluctuates between depths of 1 1/2 and 3 feet from January to April. The soil has high shrink-swell potential.

Included in mapping are a few small areas of Mhoon and Sharkey soils in positions similar to those of the Tunica soil. Also included, in the northern part of Pointe Coupee Parish, are some areas of soils that are similar to Tunica soils except that they are reddish in the lower part. Sharkey soils are clayey throughout, and Mhoon soils are loamy throughout. The included soils make up about 10 percent of the map unit.

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

This soil is moderately well suited to cultivated crops, mainly cotton, soybeans, small grain, corn, and hay. Wetness and poor tilth are the main limitations. Drainage is needed for most crops. Land smoothing improves surface drainage. Returning crop residue to the soil helps to maintain organic matter content, improve tilth, and improve the rate of water intake. Most crops respond well to nitrogen fertilizer. Other fertilizers and lime generally are not needed.

This soil is well suited to pasture. Wetness and poor tilth are the main limitations. Suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, dallisgrass, johnsongrass, tall fescue, ryegrass, small grain, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition and to protect the soil from erosion and compaction.

This soil is well suited to trees. Some areas remain in native hardwoods. Wetness and slow permeability are the main limitations to producing and harvesting trees. Seedling mortality is moderate. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling. Wetness and the clay surface layer severely limit the use of equipment.

This soil is poorly suited to urban uses. Wetness, very slow permeability, and high shrink-swell potential are the main limitations. Providing drainage, using building designs to compensate for the limitations, and backfilling with material that has low shrink-swell potential will help to offset these limitations in the construction of buildings. Low strength is a limitation for local roads and streets. Roads should be designed to offset the limited ability of the soil to support a load. Septic tank absorption fields do not function properly in this soil during rainy periods because of wetness and very slow permeability.

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

**Vc—Vacherie silt loam.** This is a level, somewhat poorly drained soil in high and intermediate positions on natural levees along the Atchafalaya and Mississippi Rivers. Slope is dominantly less than 1 percent.

Typically, the surface layer is silt loam about 11 inches thick. The upper part is dark grayish brown, and the lower part is dark gray. The upper part of the subsoil is mottled, grayish brown very fine sandy loam, and the lower part is mottled, dark gray clay and silty clay.

Water and air move through this soil at a very slow rate. Water runs off the surface at a very slow rate. Available water capacity is high or very high. This soil is high in natural fertility. The surface layer is friable and is easily tilled within a wide range in moisture content. The surface crusts or puddles after heavy rainfall. The high water table fluctuates between depths of about 1 foot and 3 feet below the surface from December to April. The subsoil has very high shrink-swell potential.

Included in mapping are a few small areas of Commerce soils and Sharkey soils. Sharkey soils are in lower positions than Vacherie soil and have more clay in the upper part of the soil. Commerce soils are in similar positions and do not have clayey layers in the lower part of the profile. The included soils make up about 10 to 15 percent of the map unit.

Most of the acreage of this Vacherie soil is used for cultivated crops. A small acreage is in pasture.

This soil is well suited to cultivated crops, mainly cotton, corn, soybeans, and sugarcane. Wetness is the main limitation. Trafficpans form easily but can be broken up by chiseling or subsoiling. Surface field ditches and land smoothing improve surface drainage. Returning crop residue to the soil, plowing under cover crops, and using a suitable cropping system help to maintain organic matter content and fertility.

This soil is well suited to pasture. Maintaining tilth and fertility are main concerns. Suitable pasture plants are common bermudagrass, dallisgrass, bahiagrass, ryegrass, johnsongrass, and white clover. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to the commercial production of trees. A few areas remain in native hardwood. Wetness moderately limits the use of equipment for planting and harvesting trees. Tree seeds, cuttings, and seedlings survive and grow well if competing vegetation is removed during site preparation or controlled by spraying, cutting, or girdling.

This soil is poorly suited to urban uses. Wetness, very slow permeability, and very high shrink-swell potential are the main limitations for building sites. Low strength is a limitation to local roads and streets. These limitations can be overcome by providing drainage and by using proper engineering designs. Septic tank absorption fields do not function properly in this soil during rainy periods because of wetness and very slow permeability.

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

## prime farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture.

It is of major importance in providing the Nation's short- and long-range needs for food and fiber. The supply of high quality farmland is limited and the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, must encourage and facilitate the use of our Nation's prime farmland with wisdom and foresight.

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

Prime farmland may now be in crops, pasture, woodland, or other land uses, but not urban and built-up land or water areas. It must either be used for producing food or fiber or be available for these uses.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It also has favorable temperature and growing season and acceptable acidity or alkalinity. It has few or no rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated with water for long periods and generally is not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent. For more detailed information on the criteria for prime farmland, consult the local staff of the Soil Conservation Service.

About 395,163 acres or nearly 77 percent of the total area in Pointe Coupee and West Baton Rouge Parishes meets the soil requirements for prime farmland. Areas are scattered throughout both parishes. Approximately 226,000 acres of this prime farmland is used for crops.

A recent trend in land use in some parts of the parishes has been the loss of some prime farmland to urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and difficult to cultivate, and usually are less productive.

Soil map units that make up prime farmland in Pointe Coupee and West Baton Rouge Parishes are listed in this section. This list does not constitute a recommendation for a particular land use. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps in the back of this publication. The soil qualities that affect use and management are described in the section "Soil maps for detailed planning."

Soils that have limitations—a high water table, flooding, or inadequate rainfall—may qualify for prime farmland if these limitations are overcome by such measures as drainage, flood control, or irrigation. However, only those soils that presently have few limitations or need no additional improvements are included on the following list.

The map units that meet the soil requirements for prime farmland are:

Bn—Bruin very fine sandy loam
Br—Bruin very fine sandy loam, gently undulating
Ce—Commerce silt loam
Cm—Commerce silty clay loam
Co—Commerce silty clay loam, gently undulating
Cp—Commerce silty clay loam, occasionally flooded
CR—Commerce soils, occasionally flooded
Ct—Convent silt loam
CV—Convent soils, occasionally flooded
De—Dundee-Alligator complex, undulating
Mh—Mhoon silty clay loam
Nd—Norwood silt loam
Se—Sharkey silty clay loam
Sf—Sharkey clay
Sm—Sharkey-Tunica complex, gently undulating
St—Sterlington silt loam
Tc—Tunica clay
Vc—Vacherie silt loam

# use and management of the soils

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

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

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

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

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

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

## crops and pasture

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

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

More than 256,000 acres in Pointe Coupee and West Baton Rouge Parishes was used for crops and pasture in 1979. Of this total, about 226,000 acres was used for crops—mainly soybeans, sugarcane, wheat, cotton, rice, corn, and pecans. More than 30,000 acres was used for pasture. Acreage for crops is increasing as woodland and pastureland are converted to cropland.

Differences in crop suitability and management needs result from differences in soil characteristics, such as fertility levels, erodibility, organic matter content, availability of water for plant growth, drainage, and flooding hazards. Cropping systems and soil tillage are also an important part of management. Each farm has unique soils; therefore, it has unique management problems. Some principles of farm management, however, apply only to specific soils and certain crops. This section presents the general principles of management that can be applied widely to the soils of Pointe Coupee and West Baton Rouge Parishes.

**Fertilizer and lime.** The amount of fertilizer needed depends upon (1) the crop to be grown; (2) past cropping history; (3) level of yield desired; and (4) soil phase. Specific recommendations should be based on laboratory analysis of soil samples from each field.

A soil sample for laboratory testing should represent a single soil phase and should represent no more than 10 acres. Agricultural agencies in the parish can supply detailed information and instructions regarding soil sampling. In the upper 20 inches, the soils in Pointe Coupee and West Baton Rouge Parishes range in reaction from strongly acid to moderately alkaline. The more acid soils may require lime.

**Organic-matter content.** Organic matter is important as a source of nitrogen for crop growth. It is also important in increasing the rate water is taken into the soil, in reducing surface crusting and soil losses by erosion, and in promoting a good physical condition of the surface soil.

Most of the cultivated soils in Pointe Coupee and West Baton Rouge Parishes are low or moderate in organic matter content.

Organic matter can be built up to a limited extent and maintained by returning plant residue to the soil, by promoting plant growth, by growing plants with extensive

root systems, by adding animal manure, and by using perennial grasses and legumes in rotation with other crops.

**Soil tillage.** The major purpose of soil tillage is seedbed preparation and weed control. Preparing the seedbed, cultivating, and harvesting can damage soil structure. Excessive cultivation of the soils should be avoided. Some of the clayey soils in the survey area become cloddy if they are cultivated.

A compact layer develops in the loamy soils if they are plowed at the same depth for long periods or are plowed when wet. This compact layer is generally known as a trafficpan or plowpan and develops just below the plow layer. The development of this compact layer can be avoided by not plowing when the soil is wet, by changing to another depth of plowing, or by subsoiling or chiseling.

Some tillage implements stir the surface and leave crop residue on the soil surface for protection from beating rains. This practice helps control erosion, reduce runoff, and increase infiltration.

**Drainage.** Many of the soils in the parishes need surface drainage to make them more suitable for crops. Early drainage methods involved a complex pattern of main ditches, laterals, and surface field drainage. The more recent approach to drainage in these parishes is a combination of land leveling and grading with a minimum of surface field ditches. This method of drainage creates larger and more uniformly shaped fields that are more suited to the use of modern, multirow farm machinery. Deep cutting of soils that have unfavorable subsoil characteristics, however, should be avoided.

Major flood control structures, such as the Mississippi River levee system and the east Atchafalaya Basin levee, protect most of the cropland and pastureland from flooding.

**Water for plant growth.** The available water capacity of the soils in both parishes is moderate to very high, and in most years sufficient water is available at the critical time for optimum plant growth. Large amounts of rainfall occur in spring and summer.

**Control of erosion.** Soil erosion generally is not a serious problem on soils of Pointe Coupee and West Baton Rouge Parishes, mainly because most of the topography is level to nearly level. Nevertheless, sheet and gully erosion can be moderately severe in fallow-plowed fields and in newly constructed drainage ditches. Some gullies tend to form, mainly on the more sloping soil and at overfalls into drainage ditches. Sheet and gully erosion can be reduced by maintaining a cover of vegetation or plant residue and by using conservation tillage. New drainage ditches should be seeded immediately after construction. Water control structures placed at overfalls into the drainage ditches will control gully erosion.

**Cropping system.** A good cropping system includes a legume for nitrogen, a cultivated crop to aid in weed control, a deep-rooted crop to make use of the fertility of the subsoil and maintain subsoil permeability, and a close-growing crop to help maintain organic matter content. In a good cropping system, the sequence of crops should be such that the soil has a cover as much of the year as possible.

A suitable cropping system varies according to the needs of the farmer and characteristics of the soil. Producers of livestock, for example, generally use a cropping system that has a higher percentage of pasture than cultivated crop. Additional information on cropping systems can be obtained from the Soil Conservation Service, the Louisiana Cooperative Extension Service, and the Louisiana Agricultural Experiment Station.

### yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby parishes and results of field trials and demonstrations are also considered.

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

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

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils.

### land capability classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider possible

but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

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

Class I soils have few limitations that restrict their use.

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

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

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

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

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

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

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

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

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the section "Detailed soil map units."

## woodland management and productivity

By H. Ford Fallin, state staff forester, Soil Conservation Service.

The total acreage of woodland in Pointe Coupee Parish is 154,000 acres, and the total acreage in West Baton Rouge Parish is 62,000 acres (*11*). Hardwood forest covers 41 percent of Pointe Coupee Parish and 46 percent of West Baton Rouge Parish (*11*). Nearly all of the woodland is privately owned. Most of the better drained soils, which are on higher elevations, have been cleared for other uses. Much of the remaining woodland is subject to flooding. More than 40,000 acres of woodland are within the Morganza Floodway.

Some good stands of oak, gum, cypress, elm, ash, and cottonwood are produced in Pointe Coupee and West Baton Rouge Parishes. The trees are used by sawmills, chip mills, and a treating plant.

The potential value of the wood products is substantial, but under present conditions, much of the area is producing far below its potential. Other tree values include habitat for wildlife, recreation use, natural beauty, and conservation of soil and water. Some of the forest areas are used for commercial crawfishing.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

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

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

In table 7, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

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

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

management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

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

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

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

## recreation

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

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

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

*Camp areas* require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm, and it is not dusty when dry.

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

*Playgrounds* require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains and is not dusty when dry.

*Paths and trails* for hiking, horseback riding, and bicycling should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use.

*Golf fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. The suitability of the soil for tees or greens is not considered in rating the soils.

## wildlife habitat

By Billy R. Craft, state staff biologist, Soil Conservation Service.

The kinds of wildlife in Pointe Coupee and West Baton Rouge Parishes are important from an ecological and economical standpoint. The open agricultural land of these two parishes is habitat for bobwhite quail, mourning dove, common snipe, meadowlark, vesper and lark sparrows, killdeer, cottontail and swamp rabbits, and many other nongame animals. Many species of wintering waterfowl also use the temporarily flooded fields. Woodcock use open agricultural fields for feeding at night and then move to forest areas during the day. Crawfish are an important economic crop in cultivated crawfish fields and in wet woodland areas. Pointe Coupee Parish has 275 acres in crawfish ponds. Interest in this type of aquaculture is growing.

Moderately low to moderately high populations of fish are in private ponds, lakes, rivers, and bayous of these parishes. The fish include largemouth bass, white bass, white and black crappie, buffalo, gar, bowfin, carp, shad, and bream (sunfish). There are approximately 23,496 acres of water in the parishes. False River and Old River Lakes are mainly used by sport fishermen. A hybrid

striped bass is showing promise as an additional sport fish in False River Lake. Borrow pits located along the levee system provide a significant fishery that has easy access to fresh water.

The 216,000 acres of forest land in the parishes is some of the best habitat for woodland wildlife in the State (*11*). This forest area has moderate to high populations of white-tailed deer, gray and fox squirrel, swamp rabbit, mink, otter, raccoon, oppossum, nutria, coyote, wild turkey, woodcock, wading birds (ibis, egrets, and herons), reptiles, amphibians, nongame birds, wood duck, and wintering species of waterfowl. Rookeries of wading birds are generally present during the spring and summer in some places.

Pointe Coupee and West Baton Rouge Parishes also provide habitat for endangered, threatened, or unique species, such as the bald eagle, osprey, wood ibis, black bear, American alligator, and the southern panther.

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

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

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

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

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

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

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

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

*Shrubs* are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are mountainmahogany, snowberry, and big sagebrush.

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

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

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

*Habitat for openland wildlife* consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild

herbaceous plants. The wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, and red fox.

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

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

## engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data in the "Soil properties" section.

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

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

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

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

This information can be used to (1) evaluate the suitability of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

### building site development

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

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

*Dwellings and small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding,

shrink-swell potential, and organic layers can cause the movement of footings. A high water table and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

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

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

**sanitary facilities**

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

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

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

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

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

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity.

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

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

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, soil reaction, and content of sodium affect trench

type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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

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

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

### construction materials

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

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

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

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

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

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

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

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

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

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

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

### water management

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

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

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

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

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

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

*Drainage* is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as sodium or sulfur. Availability of drainage outlets is not considered in the ratings.

*Irrigation* is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The performance of a system is affected by the depth of the root zone, the amount of sodium, and soil reaction.

*Grassed waterways* are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. Low available water capacity, toxic substances such as sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

# soil properties

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

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

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

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

## engineering index properties

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

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

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

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

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

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

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

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

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

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

## physical and chemical properties

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

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

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

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

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

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

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

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

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

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

*Erosion factor K* indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

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

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

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

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

## soil and water features

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

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

The four hydrologic soil groups are:

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

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

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

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

*Flooding*, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

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

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

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

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

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

An apparent water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

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

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

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

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

# classification of the soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*12*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. In table 17, the soils of the survey area are classified according to the system. The categories are defined in the following paragraphs.

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

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is 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 development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplaquents (*Hapl*, meaning minimal horizonation, plus *aquent*, the suborder of the Entisols that have an aquic moisture regime).

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

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

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

## soil series and their morphology

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

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the Soil Survey Manual (*10*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*12*). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

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

### Alligator series

The Alligator series consists of poorly drained, very slowly permeable clayey soils. These soils formed in clayey alluvium on the flood plain of the Mississippi River. The soils are in swales, depressions, or old drainageways. Slopes range from 0 to 2 percent.

The soils of the Alligator series are very-fine, montmorillonitic, acid, thermic Vertic Haplaquepts.

Alligator soils are closely associated with Dundee and Sharkey soils. Dundee soils are on low, convex ridges and have a fine-silty control section. Sharkey soils are in positions similar to Alligator soils and are more alkaline throughout the solum.

Typical pedon of Alligator clay, in an area of Dundee-Alligator complex, undulating, 4.2 miles southeast of New Roads, 3 miles south of intersection of Louisiana Highway 413 and Louisiana Highway 414 in Ventress, 40 feet north of fence; Spanish Land Grant 101, T. 5 S., R. 10 E., in Pointe Coupee Parish:

Ap—0 to 8 inches; dark gray (10YR 4/1) clay; few fine distinct dark brown mottles; moderate fine subangular blocky structure; firm; few fine roots; strongly acid; abrupt wavy boundary.
B21g—8 to 17 inches; gray (10YR 5/1) clay; common fine distinct dark brown mottles; moderate medium subangular structure and angular blocky; common fine pressure faces; few slickensides; firm; few fine roots; strongly acid; gradual wavy boundary.
B22g—17 to 28 inches; gray (10YR 5/1) clay; common fine distinct dark brown mottles; weak coarse subangular blocky structure; common slickensides that do not intersect; firm, plastic and sticky; few fine roots; strongly acid; gradual wavy boundary.
B23g—28 to 53 inches; gray (10YR 6/1) clay; common medium distinct dark brown (7.5YR 4/4) mottles; weak coarse subangular blocky structure; firm, plastic and sticky; strongly acid; clear wavy boundary.
Cg—53 to 73 inches; light brownish gray (10YR 6/2) silty clay loam; common fine distinct dark yellowish brown mottles; massive; firm, sticky; strongly acid.

Solum thickness ranges from 40 to 60 inches. Except where the surface has been limed, the soil in the upper 40 inches is strongly acid or very strongly acid. In some places, the soil below a depth of 40 inches is slightly acid or neutral.

The A horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1. It is clay or silty clay.

The Bg horizon has hue of 10YR, 2.5Y, or 5Y; value of 4 to 6; and chroma of 1 or 2. Brown and yellow mottles range from few to many. The texture is clay or silty clay.

The Cg horizon is silty clay loam, silty clay, or clay in colors similar to those of the Bg horizon.

## Bruin series

The Bruin series consists of moderately well drained, moderately permeable soils. These soils are on old natural levees of the Mississippi River and its distributaries. The soils formed in loamy alluvium. Slopes range from 0 to 3 percent.

The soils of the Bruin series are coarse-silty, mixed, thermic Fluvaquentic Eutrochrepts.

Bruin soils are closely associated with Convent, Commerce, and Mhoon soils. Convent soils are somewhat poorly drained and do not have a cambic horizon. Commerce soils are somewhat poorly drained and have a fine-silty control section. Mhoon soils are poorly drained and have a fine-silty control section.

Typical pedon of Bruin very fine sandy loam, 1 mile west of New Roads, 84 feet north of Louisiana Highway 1, and 165 feet west of east section line; Spanish Land Grant 44, T. 4 S., R. 10 E., in Pointe Coupee Parish:

A1—0 to 4 inches; dark grayish brown (10YR 4/2) very fine sandy loam; weak fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.
B21—4 to 7 inches; brown (10YR 5/3) very fine sandy loam; common fine faint grayish brown mottles; weak coarse subangular blocky structure; friable; few fine random tubular pores; neutral; clear smooth boundary.
B22—7 to 14 inches; dark brown (10YR 4/3) loam; few fine distinct strong brown mottles; weak coarse subangular blocky structure; friable; few medium random tubular pores; neutral; clear smooth boundary.
B23—14 to 19 inches; brown (10YR 5/3) very fine sandy loam; common fine faint brown and common medium distinct strong brown mottles (7.5YR 5/6); weak coarse subangular blocky structure; friable; few fine roots; mildly alkaline; clear smooth boundary.
B3—19 to 25 inches; brown (10YR 5/3) very fine sandy loam; many fine faint grayish brown and common fine faint dark brown mottles; weak coarse subangular blocky structure; friable; common fine random tubular pores; mildly alkaline; clear smooth boundary.
C1—25 to 30 inches; grayish brown (10YR 5/2) silt loam; massive; friable; mildly alkaline; clear smooth boundary.
C2—30 to 35 inches; brown (10YR 5/3) very fine sandy loam; common fine distinct strong brown mottles; massive; friable; mildly alkaline; clear smooth boundary.
C3—35 to 54 inches; brown (10YR 5/3) silt loam; few fine distinct strong brown mottles; massive; friable; mildly alkaline; clear smooth boundary.
C4—54 to 57 inches; yellowish brown (10YR 5/4) very fine sandy loam; common fine distinct strong brown mottles; massive; friable; mildly alkaline; clear smooth boundary.
C5—57 to 70 inches; grayish brown (10YR 5/2) silt loam; few fine faint dark brown mottles; massive; friable; mildly alkaline.

Solum thickness ranges from 18 to 40 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is very fine sandy loam or silt loam. Reaction ranges from medium acid to mildly alkaline.

The B horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Mottles of 2 chroma or less are within 24 inches of the surface. The B horizon is very fine sandy loam, loam, or silt loam. Reaction ranges from slightly acid to mildly alkaline.

The C horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 4. Grayish or brownish mottles range from few to many. Texture is loamy very fine sand, very fine sandy loam, loam, silty clay loam, or silt loam. Reaction ranges from slightly acid to moderately alkaline.

## Commerce series

The Commerce series consists of somewhat poorly drained, moderately slowly permeable soils. These soils are on natural levees of the Atchafalaya and Mississippi Rivers and their distributaries. The soils formed in loamy alluvium. Slopes range from 0 to 3 percent.

The soils of the Commerce series are fine-silty, mixed, nonacid, thermic Aeric Fluvaquents.

Commerce soils are geographically associated with Convent and Mhoon soils. Convent soils have a coarse-silty control section, and Mhoon soils are poorly drained.

Typical pedon of Commerce silt loam, 6.5 miles north of Fordoche on Louisiana Highway 77, 66 feet north of the highway, and 1,310 feet east of section line; Spanish Land Grant 65, T. 5 S., R. 8 E., in Pointe Coupee Parish:

Ap—0 to 4 inches; grayish brown (10YR 5/2) silt loam; weak fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

B21—4 to 17 inches; dark grayish brown (10YR 4/2) loam; common fine faint dark brown mottles; weak medium subangular blocky structure; friable; few fine roots; mildly alkaline; clear smooth boundary.

B22—17 to 24 inches; dark grayish brown (10YR 4/2) silt loam; common fine faint dark brown mottles; weak coarse subangular blocky structure; friable; few fine random tubular pores; few fine roots; mildly alkaline; abrupt smooth boundary.

C1—24 to 40 inches; dark grayish brown (10YR 4/2) silty clay loam; many fine faint dark brown mottles; massive; friable; mildly alkaline; abrupt smooth boundary.

C2—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; common fine faint dark brown mottles; massive; friable; few fine roots; mildly alkaline; abrupt smooth boundary.

C3—49 to 71 inches; mixed gray (10YR 5/1) and dark brown (7.5YR 4/4) silty clay loam; massive; friable; mildly alkaline.

Solum thickness ranges from 20 to 40 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. Under sugarcane culture, the lower part of the horizon ranges to dark gray (10YR 4/1). The horizon is silt loam or silty clay loam. Reaction ranges from medium acid to mildly alkaline.

The B horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2. Brownish or grayish mottles are few to common. Texture is silt loam, loam, or silty clay loam. Reaction ranges from slightly acid to moderately alkaline.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. It has few to common brownish mottles. The horizon is very fine sandy loam, silt loam, loam, silty clay loam, or silty clay and commonly is stratified or thinly bedded. Reaction is neutral to moderately alkaline.

Commerce silty clay loam, gently undulating, in Pointe Coupee Parish is a taxadjunct to the Commerce series. Red mottles in the lower part of the B2 horizon place this soil outside of the defined range for the Commerce series. This difference does not alter the use and behavior of this soil.

## Convent series

The Convent series consists of somewhat poorly drained, moderately permeable soils. These soils are on the natural levees of the Atchafalaya and Mississippi Rivers and their distributaries. The soils formed in recent alluvium. Slopes range from 0 to 3 percent.

The soils of the Convent series are coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents.

Convent soils are closely associated with Commerce, Mhoon, and Sharkey soils. Commerce and Mhoon soils have a fine-silty control section, and Sharkey soils have a very-fine control section.

Typical pedon of Convent silt loam, 126 feet south of Louisiana Highway 620 and 36 feet west of Grand Bayou; Spanish Land Grant 82, T. 6 S., R. 11 E., in West Baton Rouge Parish:

Ap1—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam; weak very fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

Ap2—5 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak very fine granular structure; friable; common medium random tubular pores; slightly acid; abrupt smooth boundary.

C1—8 to 24 inches; grayish brown (10YR 5/2) very fine sandy loam; common fine faint dark brown mottles; massive; friable; few fine roots; neutral; clear smooth boundary.

C2—24 to 43 inches; grayish brown (10YR 5/2) very fine sandy loam; common fine faint dark brown mottles; massive; friable; mildly alkaline; clear smooth boundary.

C3—43 to 49 inches; grayish brown (10YR 5/2) silty clay loam; massive; friable; many fine random tubular pores; mildly alkaline; clear smooth boundary.

C4—49 to 60 inches; grayish brown (10YR 5/2) silt loam; many fine distinct strong brown mottles; massive; friable; mildly alkaline.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3; or it has hue of 7.5YR, value of 4, and chroma of 2. It ranges from medium acid to moderately alkaline.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2. In places, dark brown (7.5YR 4/2,

4/4; 10YR 3/3, 4/3) or pale brown (10YR 6/3) strata make up about 40 percent of the 10- to 40-inch control section. The C horizon is silt loam or very fine sandy loam. Reaction ranges from slightly acid to moderately alkaline. In some places, there are strata of coarser or finer textured material, and in places, there are some carbonates in the strata below a depth of 20 inches.

In some places, an Ab or a IIC horizon is at a depth of 40 inches or more. These horizons are fine sandy loam, loamy very fine sand, very fine sandy loam, loam, silt loam, silty clay loam, clay loam, silty clay, or clay.

## Dundee series

The Dundee series consists of somewhat poorly drained, moderately slowly permeable soils. These soils are on natural levees or low terraces along former channels of the Mississippi River. The soils formed in thinly stratified beds of loamy alluvium. Slopes range from 0 to 5 percent.

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

Dundee soils are near Alligator soils in the landscape. Alligator soils are in swales and have a very-fine control section.

Typical pedon of Dundee silty clay loam, in an area of Dundee-Alligator complex, undulating, 4 miles southeast of New Roads and 2.8 miles south of the intersection of Louisiana Highway 413 and Louisiana Highway 414 in Ventress; Spanish Land Grant 101, T. 5 S., R. 10 E., in Pointe Coupee Parish:

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silty clay loam; weak fine subangular blocky structure; friable; common fine and very fine roots; moderately alkaline; abrupt wavy boundary.

B21tg—4 to 11 inches; grayish brown (10YR 5/2) clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine discontinuous random vesicular pores; common fine and very fine roots; thin discontinuous clay films on surfaces of peds; medium acid; clear wavy boundary.

B22tg—11 to 17 inches; grayish brown (10YR 5/2) clay loam; common fine prominent yellowish red and common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine discontinuous random vesicular pores; common fine roots; thin discontinuous clay films on surfaces of peds; strongly acid; clear wavy boundary.

B23tg—17 to 24 inches; grayish brown (10YR 5/2) clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; friable; common fine discontinuous random vesicular pores; thin discontinuous clay films on surfaces of peds; very strongly acid; clear wavy boundary.

B3g—24 to 38 inches; light brownish gray (10YR 6/2) loam; common fine prominent strong brown mottles; weak coarse subangular blocky structure; friable; thin patchy clay films on surfaces of some peds; very strongly acid; clear wavy boundary.

Cg—38 to 60 inches; light brownish gray (10YR 6/2) loam; few fine prominent strong brown mottles; massive; friable; strongly acid.

Solum thickness ranges from 24 to 42 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is very dark grayish brown (10YR 3/2) if the horizon is less than 6 inches thick. Texture is silt loam or silty clay loam. Reaction ranges from medium acid to very strongly acid, except where the surface has been limed. The A horizon ranges from 4 to 8 inches in thickness.

The B2t horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2. It is clay loam, silty clay loam, or silt loam. Reaction ranges from medium acid to very strongly acid.

The B3 horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It is silt loam, loam, silty clay loam, clay loam, or sandy clay loam. Reaction ranges from medium acid to very strongly acid.

The C horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It is loam, very fine sandy loam, or silt loam. In some places, there is a silty clay or clay IIC horizon at a depth of from 40 to 60 inches. Reaction ranges from neutral to very strongly acid.

## Fausse series

The Fausse series consists of very poorly drained, very slowly permeable soils. These soils are in broad, level depressions in the Atchafalaya floodway and in swales along former channels of the Mississippi River. The soils formed in clayey alluvium. Slope is less than 0.5 percent.

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

Fausse soils are closely associated with Sharkey soils. Sharkey soils are in higher positions and have cracks that extend from the surface to a depth of 20 inches or more during dry periods of most years.

Typical pedon of Fausse clay, in an area of Fausse soils, frequently flooded, 2.5 miles north of Louisiana Highway 190 bridge over Morganza Floodway; Spanish Land Grant 85, T. 5 S., R. 8 E., Pointe Coupee Parish:

A1—0 to 3 inches; very dark gray (10YR 3/1) clay; weak coarse prismatic structure; plastic, very sticky; slightly acid; clear smooth boundary.

B21g—3 to 11 inches; gray (N 5/0) clay; many medium prominent strong brown (7.5YR 5/6) mottles; weak medium angular blocky structure parting to weak fine angular blocky; plastic, very sticky; slightly acid; clear wavy boundary.

B22g—11 to 19 inches; gray (N 5/0) clay; few fine strong brown mottles; weak medium subangular blocky structure parting to weak fine angular blocky; sticky and plastic; mildly alkaline; clear wavy boundary.
B23g—19 to 30 inches; gray (N 5/0) clay; few fine strong brown mottles; weak medium subangular blocky structure parting to weak fine angular blocky; plastic, very sticky; mildly alkaline; gradual wavy boundary.
Cg—30 to 60 inches; gray (N 5/0) clay; massive; plastic, very sticky; mildly alkaline.

Solum thickness ranges from 25 to 50 inches. The soil is saturated continuously in all layers above 24 inches in most years.

Where present, the O2 horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2, or it is neutral. Texture is muck, and reaction ranges from medium acid to neutral. Thickness of the horizon ranges from 0 to 4 inches.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Reaction ranges from medium acid to neutral. Thickness of the horizon ranges from 2 to 10 inches.

The Bg horizon has hue of 10YR, value of 4 or 5, and chroma of 1, or it is neutral. Reaction ranges from slightly acid to moderately alkaline.

The Cg horizon has hue of 5Y, value of 4 or 5, and chroma of 1, or it is neutral. It is clay, silty clay, or silty clay loam. Reaction ranges from mildly alkaline to moderately alkaline.

## Mhoon series

The Mhoon series consists of poorly drained, slowly permeable soils. These soils are on natural levees of the Atchafalaya and Mississippi Rivers and their distributaries. The soils formed in recent, alkaline alluvium. Slopes range from 0 to 1 percent.

The soils of the Mhoon series are fine-silty, mixed, nonacid thermic Typic Fluvaquents.

Mhoon soils are closely associated with Commerce and Sharkey soils. Commerce soils are better drained and are in higher positions than those of Mhoon soils. Sharkey soils are clayey throughout and in lower positions.

Typical pedon of Mhoon silty clay loam, 1 mile west of Chamberlain on parish road, 80 feet north of road; Spanish Land Grant 57, T. 6 S., R. 11 E., in West Baton Rouge Parish:

Ap—0 to 6 inches; dark gray (10YR 4/1) silty clay loam; weak medium granular structure; very friable; neutral; clear smooth boundary.
B1g—6 to 14 inches; gray (10YR 5/1) silty clay loam; few medium distinct dark yellowish brown (10YR 4/4) mottles; weak fine subangular blocky structure; very friable; neutral; abrupt smooth boundary.
B2g—14 to 20 inches; dark gray (10YR 4/1) silty clay loam; few medium distinct dark yellowish brown (10YR 4/4) mottles; weak medium subangular blocky structure; firm, sticky and plastic; neutral; clear smooth boundary.
B3g—20 to 38 inches; gray (10YR 6/1) silt loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak fine subangular blocky structure; very friable; neutral; abrupt smooth boundary.
Cg—38 to 60 inches; gray (10YR 5/1) silty clay loam; few medium distinct dark yellowish brown (10YR 4/4) mottles; massive; firm, sticky and plastic; neutral.

Solum thickness ranges from 20 to 50 inches.

The A horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 or 2, or it is neutral. Colors of 3 value are limited to the A horizon that is less than 6 inches thick. Reaction ranges from slightly acid to mildly alkaline.

The Bg horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1 or 2, or it is neutral. Few to many brownish mottles range from fine to medium. In some places, the Bg horizon has thin strata of silt loam, clay loam, or silty clay. Reaction ranges from slightly acid to moderately alkaline.

The Cg horizon is similar to the Bg horizon in color, texture, and reaction.

## Norwood series

The Norwood series consists of well drained, moderately permeable soils. These soils are mostly on nearly level flood plains of the Atchafalaya and Red Rivers. The soils formed in loamy, calcareous alluvium. Slope is less than 1 percent.

The soils of the Norwood series are fine-silty, mixed (calcareous), thermic Typic Udifluvents.

Norwood soils are closely associated with Sterlington soils in the landscape. Sterlington soils have a coarse-silty control section.

Typical pedon of Norwood silt loam, about 0.2 mile east of intersection of Louisiana Highway 1 and Louisiana Highway 418 and 75 feet south; Spanish Land Grant 30, T. 1 S., R. 7 E., in Pointe Coupee Parish:

Ap1—0 to 4 inches; reddish brown (5YR 4/4) silt loam; weak fine granular structure; friable; common fine and medium roots; slight effervescence; moderately alkaline; clear wavy boundary.
Ap2—4 to 11 inches; yellowish red (5YR 4/6) silt loam; weak fine granular structure; friable; common fine roots; slight effervescence; moderately alkaline; abrupt smooth boundary.
B21—11 to 19 inches; yellowish red (5YR 4/6) silt loam; weak fine subangular blocky structure; friable; common very fine roots; slight effervescence; moderately alkaline; clear wavy boundary.

B22—19 to 33 inches; reddish brown (5YR 4/4) silty clay loam; weak medium subangular blocky structure; friable; few very fine discontinuous random vesicular pores; violent effervescence; moderately alkaline; clear wavy boundary.
C1—33 to 40 inches; reddish brown (5YR 4/4) silt loam; massive; friable; violent effervescence; moderately alkaline; clear wavy boundary.
C2—40 to 48 inches; yellowish red (5YR 4/6) silty clay loam; few fine distinct grayish brown mottles; massive; friable; common fine bedding planes; common fine distinct dark brown and black charcoal fragments; violent effervesence; moderately alkaline; clear smooth boundary.
C3—48 to 60 inches; reddish brown (5YR 4/4) silty clay loam; massive; friable; common fine bedding planes; violent effervescence; moderately alkaline.

Depth to bedding planes ranges from near the soil surface to 39 inches.

The A horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 to 6, and chroma of 3 to 6. Reaction is mildly alkaline or moderately alkaline. Thickness of the horizon ranges from 5 to 18 inches.

Where present, the B horizon has hue of 5YR or 7.5YR, value of 4 to 7, and chroma of 3 to 6. It is silt loam or silty clay loam.

The C horizon has hue of 5YR or 7.5YR, value of 4 to 7, and chroma of 3 to 6. It is silt loam, silty clay loam, or very fine sandy loam. Bedding planes are throughout the C horizon.

## Robinsonville series

The Robinsonville series consists of well drained soils. Permeability is moderate to moderately rapid. These soils are mainly on the batture side of the levee next to the Mississippi and Atchafalaya Rivers. The soils formed in loamy and sandy alluvium. Slopes range from 0 to 3 percent.

The soils of the Robinsonville series are coarse-loamy, mixed, nonacid, thermic Typic Udifluvents.

Robinsonville soils are closely associated with Bruin and Convent soils in the landscape. Bruin and Convent soils have a coarse-silty control section. In addition, Convent soils are more poorly drained than Robinsonville soils.

Typical pedon of Robinsonville silt loam, in an area of Robinsonville and Commerce soils, occasionally flooded, 4 miles east of New Roads and about 600 feet west of Mississippi River on the batture side of the levee; east side of Spanish Land Grant 14, T. 4 S., R. 11 E., in Pointe Coupee Parish:

A1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; common fine faint grayish brown and few fine distinct yellowish brown mottles; weak fine granular structure; friable; common medium and fine roots; mildly alkaline; clear smooth boundary.
C1—6 to 12 inches; dark brown (10YR 4/3) silt loam; common fine faint dark grayish brown and few fine prominent strong brown mottles; weak medium subangular blocky structure parting to weak fine granular; friable; common fine roots; moderately alkaline; clear smooth boundary.
C2—12 to 22 inches; brown (10YR 5/3) very fine sandy loam; few fine faint dark grayish brown mottles; massive; very friable; bedding planes are evident; few very fine discontinuous random vesicular pores; few very fine roots; common medium distinct strong brown (7.5YR 5/6) stains along root channels; moderately alkaline; clear smooth boundary.
C3—22 to 37 inches; pale brown (10YR 6/3) very fine sandy loam; massive; very friable; thin strata of loamy very fine sand; bedding planes are evident; moderately alkaline; clear smooth boundary.
C4—37 to 60 inches; pale brown (10YR 6/3) loamy very fine sand; few fine distinct yellowish brown mottles; single-grained; loose; thin bedding planes; mildly alkaline.

Reaction ranges from slightly acid to moderately alkaline throughout. The 10- to 40-inch control section averages between 5 and 18 percent clay.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. It is very fine sandy loam, silt loam, fine sandy loam, or loam.

The C horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. In some places, there are mottles of chroma 2 or less below a depth of 20 inches. The C horizon is stratified fine sandy loam, silt loam, loam, very fine sandy loam, loamy very fine sand, or loamy fine sand.

In places, a buried A horizon is below a depth of 20 inches.

## Sharkey series

The Sharkey series consists of poorly drained, very slowly permeable soils. These soils are mainly on natural levees and in depressions on the flood plains of the Mississippi and Atchafalaya Rivers. The soils formed in recent clayey alluvium. Slopes range from 0 to 5 percent.

The soils of the Sharkey series are very-fine, montmorillonitic, nonacid, thermic Vertic Haplaquepts.

Sharkey soils are closely associated with Commerce and Mhoon soils in the landscape. Both Commerce and Mhoon soils are in higher positions and have a fine-silty control section.

Typical pedon of Sharkey clay, 4.2 miles northwest of Plaquemine, 3.2 miles west of Louisiana Highway 1, 1,500 feet north of Louisiana Highway 1148, and 100 feet east of pipeline; Spanish Land Grant 28, T. 8 S., R. 11 E., in West Baton Rouge Parish:

A11—0 to 3 inches; dark gray (10YR 4/1) clay; weak fine subangular blocky structure; firm; neutral; clear smooth boundary.

A12—3 to 11 inches; dark gray (10YR 4/1) clay; common fine faint dark yellowish brown mottles; moderate medium subangular blocky structure; firm; mildly alkaline; clear smooth boundary.
B21g—11 to 21 inches; dark gray (10YR 4/1) clay; many fine faint dark yellowish brown mottles; moderate medium subangular blocky structure; very firm; shiny faces on peds; moderately alkaline; clear smooth boundary.
B22g—21 to 30 inches; dark gray (10YR 4/1) clay; common fine faint dark yellowish brown and common fine distinct dark brown mottles; weak coarse subangular blocky structure parting to moderate medium subangular blocky; very firm; common shiny faces on peds; moderately alkaline; clear smooth boundary.
B3g—30 to 50 inches; gray (10YR 5/1) clay; common fine distinct dark brown mottles; moderate medium subangular blocky structure; firm; few slickensides; moderately alkaline; clear smooth boundary.
Cg—50 to 60 inches; gray (10YR 5/1) clay; few fine faint yellowish brown mottles; weak medium subangular blocky structure; few slickensides; moderately alkaline.

Solum thickness ranges from about 36 to 60 inches. Cracks form that are from 1 to 3 centimeters in width and 50 to 60 centimeters or more in depth. COLE is greater than .09 throughout the B horizon. In places, the soil is calcareous below a depth of 20 inches.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or less. An A horizon that has value of 2 or 3 is generally less than 10 inches thick. The A horizon is dominantly clay, but the range includes silty clay and silty clay loam. Reaction ranges from strongly acid to moderately alkaline.

The B horizon has hue of 5Y or 10YR, value of 4 to 6, and chroma of 1 or 2, or it is neutral. Reaction ranges from medium acid to moderately alkaline. In places, there are thin subhorizons of silty clay loam. Clay content of the B horizon averages more than 60 percent.

The C horizon has the same color range as the B horizon. Reaction ranges from neutral to moderately alkaline. Typically, the texture is clay or silty clay, but, in some places, it is coarser textured below a depth of 40 inches.

In places, a buried A horizon of clay is below a depth of 20 inches.

## Sterlington series

The Sterlington series consists of well drained, moderately permeable soils. These soils are mainly on natural levees along Bayou Latenache, an old abandoned channel of the Arkansas or Red River. The soils formed in silty alluvium of mixed mineralogy. Slopes range from 0 to 1 percent.

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

Sterlington soils are closely associated with Norwood and Commerce soils. Norwood and Commerce soils are in positions similar to those of Sterlington soils; they have a fine-silty control section.

Typical pedon of Sterlington silt loam, 2.5 miles southwest of Innis and 320 feet south of blacktop road in a field; Spanish Land Grant 75, T. 2 S., R. 7 E., in Pointe Coupee Parish:

Ap1—0 to 8 inches; brown (10YR 5/3) silt loam; weak fine granular structure; friable; medium acid; abrupt smooth boundary.
Ap2—8 to 13 inches; dark brown (7.5YR 4/4) very fine sandy loam; weak fine granular structure; friable; medium acid; abrupt smooth boundary.
A2—13 to 18 inches; brown (7.5YR 5/4) very fine sandy loam; weak medium subangular blocky structure; friable; medium acid; abrupt wavy boundary.
B2t—18 to 30 inches; reddish brown (5YR 5/4) loam; weak medium subangular blocky structure; friable; thin patchy clay films on surfaces of peds; slightly acid; clear irregular boundary.
B&A'—30 to 46 inches; reddish brown (5YR 5/4) loam (B); weak medium subangular blocky structure; friable; light brown (7.5YR 6/4) silt loam (A') streaks and ped coatings that make up about 20 percent of the horizon; slightly acid; abrupt wavy boundary.
C—46 to 60 inches; dark brown (7.5YR 4/4) very fine sandy loam; common coarse prominent brown (10YR 5/3) mottles; massive; very friable; slightly acid.

Solum thickness ranges from 36 to 60 inches.

The A horizon has hue of 10YR, 7.5YR, or 5YR, value of 3 to 5, and chroma of 2 to 4. A subhorizon of the A horizon that has value of 3 is generally less than 6 inches thick. Unless the surface has been limed, reaction ranges from strongly acid to medium acid.

The Bt horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6. It is silt loam, loam, or very fine sandy loam. The Bt horizon ranges from strongly acid to slightly acid. At least one subhorizon of the Bt horizon has hue of 5YR. Subhorizons have streaks and ped coatings of A' material that make up 40 percent or more of the subhorizon. The A' material has chroma of 3 or more.

The C horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 or 5, and chroma of 4 to 6. It is very fine sandy loam, silt loam, or silty clay loam. Reaction ranges from strongly acid to moderately alkaline.

## Tunica series

The Tunica series consists of poorly drained, very slowly permeable soils. These soils are on natural levees of the Atchafalaya and Mississippi Rivers and their distributaries. The soils formed in clayey sediment that is 20 to 30 inches thick over loamy material. Slopes range from 0 to 1 percent.

The soils of the Tunica series are clayey over loamy, montmorillonitic, nonacid, thermic Vertic Haplaquepts.

Tunica soils are closely associated with Commerce and Mhoon soils in the landscape. Both Commerce and Mhoon soils have a fine-silty control section.

Typical pedon of Tunica clay, 195 feet south of grove of trees and 540 feet west of powerline; NE1/4NE1/4, sec. 32, T. 6 S., R. 10 E., in West Baton Rouge Parish:

A1—0 to 4 inches; dark gray (10YR 4/1) clay; moderate medium subangular blocky structure parting to moderate fine granular; plastic; many fine roots; neutral; abrupt smooth boundary.

B21g—4 to 10 inches; gray (10YR 5/1) clay; many fine distinct strong brown mottles; moderate medium subangular blocky structure; plastic; few fine roots; mildly alkaline; clear smooth boundary.

B22g—10 to 20 inches; gray (10YR 5/1) clay; common fine distinct strong brown mottles; moderate medium subangular blocky structure; plastic; few fine roots; mildly alkaline; clear smooth boundary.

B23g—20 to 23 inches; gray (10YR 5/1) silty clay; many fine distinct dark brown mottles; moderate medium subangular blocky structure; plastic; many medium and few coarse random tubular pores; many fine roots; mildly alkaline; clear smooth boundary.

IIC1—23 to 31 inches; gray (10YR 5/1) silt loam; few fine dark brown distinct mottles; massive; friable; common medium tubular pores; mildly alkaline; clear smooth boundary.

IIC2—31 to 44 inches; gray (10YR 5/1) loam, few fine distinct strong brown mottles; massive; very friable; mildly alkaline; abrupt smooth boundary.

IIC4—44 to 60 inches; grayish brown (10YR 5/2) loam; common fine distinct strong brown mottles; massive; very friable; mildly alkaline.

Solum thickness ranges from 20 to 36 inches. Reaction ranges from medium acid to mildly alkaline throughout.

The A horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. In some places, the A horizon has color value of 3. Texture is clay or silty clay.

The B2g horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 or 2. It is silty clay or clay.

The IIC horizon has colors similar to those of the B2g horizon. It is silt loam, loam, silty clay loam, or fine sandy loam. In places, the lower part of the IIC horizon is loamy fine sand.

## Vacherie series

The Vacherie series consists of somewhat poorly drained, very slowly permeable soils. These soils are mainly on natural levees of the Mississippi and Atchafalaya Rivers and their distributaries. The soils formed in silty and clayey alluvium. Slopes range from 0 to 1 percent.

The soils of the Vacherie series are coarse-silty over clayey, mixed, nonacid, thermic Aeric Fluvaquents.

Vacherie soils are closely associated with Commerce and Sharkey soils. Commerce soils do not have clayey underlying material, and Sharkey soils are clayey throughout.

Typical pedon of Vacherie silt loam, 0.5 mile northwest of Addis, 2,150 feet northwest of traffic light on Louisiana Highway 1, 65 feet east of blacktop road, and 100 feet southwest of pecan tree; Spanish Land Grant 27, T. 8 S., R. 12 E., in West Baton Rouge Parish:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; slightly acid; clear smooth boundary.

Ap2—6 to 11 inches; dark gray (10YR 4/1) silt loam; common coarse faint dark grayish brown (10YR 4/2) and common fine faint brown mottles; moderate medium subangular blocky structure; friable; slightly acid; clear wavy boundary.

B2—11 to 25 inches; grayish brown (10YR 5/2) very fine sandy loam; common fine faint yellowish brown and dark yellowish brown mottles; weak medium subangular blocky structure; very friable; mildly alkaline; abrupt smooth boundary.

IIAbg—25 to 31 inches; dark gray (10YR 4/1) silty clay; common fine faint dark yellowish brown mottles; moderate medium subangular blocky structure; firm; moderately alkaline; clear smooth boundary.

IIBbg—31 to 60 inches; dark gray (10YR 4/1) clay; common fine faint dark yellowish brown mottles; weak medium subangular blocky structure; firm, slightly sticky and plastic; moderately alkaline.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3, or it is neutral. Reaction ranges from medium acid to moderately alkaline.

The B horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2. In places, there is a gray (10YR 5/1) subhorizon. The B horizon is silt loam or very fine sandy loam. Reaction ranges from slightly acid to moderately alkaline.

The IIAbg or IIBbg horizon, or both, have hue of 10YR, value of 4 or 5, and chroma of 1, or they are neutral. Texture is clay or silty clay. Reaction ranges from neutral to moderately alkaline.

# formation of the soils

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

## processes of soil formation

The processes of soil formation influence the kind and degree of development of soil horizons. The factors of soil formation—climate, living organisms, relief, parent material, and time—determine the rate and effectiveness of the different processes.

Important soil-forming processes include those that result in additions of organic, mineral, and gaseous materials to the soil (*9*); losses of these materials from the soil; translocation of materials from one point to another within the soil; and physical and chemical transformation of mineral and organic materials within the soil.

Typically, many processes occur simultaneously in soils. Examples in the survey area include accumulating organic matter, developing soil structure, and leaching of bases from the surface horizon. The contribution of a particular process may change with time. For example, levee protection has reduced flooding and has resulted in a reduced rate of accumulation of sediment on many soils in the survey area. Some important processes that have contributed to the formation of soils in Pointe Coupee and West Baton Rouge Parishes are discussed in the following paragraphs.

Organic matter has accumulated, undergone partial decomposition, and been incorporated into all of the soils. Because organic matter production is greatest in and above the surface layer, these soils have a surface layer that is darker than the deeper horizons. Exceptions are soils that have a dark surface layer of an older soil that has been buried by more recent alluvium.

The decomposing, incorporating, and mixing of organic residue into the soil is accomplished largely by the activity of living organisms. Many of the more stable products of decomposition remain as finely divided material. These products increase granulation and are a source of plant nutrients in the soil. In the Fausse soils, the A horizon has been darkened by the accumulation of organic matter.

Intermittent additions of alluvium on the surface have been important in the formation of some of the soils. Added sediment provides new parent material. This accumulation of new material has occurred at a faster rate than the processes of soil formation could appreciably alter the soils. Strata that are evident in soils such as Robinsonville soils are the result of such accumulation. Sediment that has widely contrasting texture is evident in the Tunica and Vacherie soils.

Processes that result in development of soil structure have occurred in most of the soils. Plant roots and other organisms result in rearrangement of soil material. Decomposition products or organic residue and secretions of organisms serve as cementing agents that help to stabilize structural aggregates. Alternate wetting and drying and shrinking and swelling result in the development of structural aggregates and are particularly effective in soils that have appreciable amounts of clay, such as Sharkey soils.

The translocation of elements from upper to lower horizons of the soil has been an important process in soil formation. Water moving through the soil leaches soluble bases and any free carbonates that were initially in the upper horizons. This process is indicated by soil reaction that is more alkaline in the lower horizons than in the surface horizon and by the absence of free carbonates in the surface horizon of soils that are calcareous in the lower horizons. The effects of leaching are most pronounced in the Alligator, Dundee, and Sterlington soils. These soils, which formed in the oldest sediment in the survey area, are acid throughout or at least in the upper horizons of the soil. The other soils in the survey area are not so leached and typically are neutral or alkaline in the upper horizons.

The poorly drained and very poorly drained soils in the survey area have horizons in which the reduction and segregation of iron, and perhaps manganese, compounds have been important processes. Reducing conditions prevail in the poorly aerated horizons. Consequently, the soluble reduced forms of iron and manganese are predominant over the much less soluble oxidized forms. Reduced forms of these elements result in the gray colors that are characteristic of the Bg and Cg horizons in soils such as Fausse, Mhoon, Sharkey, and Tunica soils. In the more soluble reduced forms, appreciable amounts of iron and manganese may be removed from the soils or translocated by water from one part to another within the soil. The presence of brown mottles in the predominantly gray horizons is indicative of the segregation and concentration of

oxidized iron compounds as a result of alternating oxidizing and reducing conditions in the soils.

The formation, translocation, and accumulation of clay in the profile have been important processes during the development of the Dundee and Sterlington soils in the survey area. Silicon and aluminum, released as a result of weathering of such minerals as pyroxenes, amphiboles, and feldspars, can recombine with the components of water to form such secondary clay minerals as kaolinite. Layer silicate minerals, such as biotite and montmorillonite, can also weather to form other clay minerals, such as vermiculite or kaolinite. Horizons of secondary accumulation of clay result largely from translocation of clays from upper to lower horizons. As water moves downward, it carries small amounts of clay in suspension. This clay is deposited, and it accumulates at the depths of penetration of the water or in horizons where it becomes flocculated or filtered out by fine pores in the soil. Over long periods, such processes can result in distinct horizons of clay accumulation.

Secondary accumulations of calcium carbonate may be present in the lower part of the subsoil in some of the soils. Carbonates dissolved from overlying horizons may have been translocated to these depths by water and redeposited. Other sources and processes may contribute in varying degrees to carbonate accumulation; for example, segregation of material within the horizons, upward translocation of material in solution from deeper horizons during fluctuations of water table levels, and contributions of material from such readily weatherable minerals as plagioclase. Calcium carbonate was initially present in the sediment that was the parent material for the Norwood soils. The Norwood soils typically have calcium carbonate throughout.

## factors of soil formation

A soil is a natural, three-dimensional body on the earth's surface that has properties resulting from the integrated effect of climate and living matter acting on parent material, as conditioned by relief over periods of time.

The interaction of five main factors influences the processes of soil formation and results in differences among the soils. These factors are the physical and chemical composition of the parent material; the climate during the formation of soil from the parent material; the kinds of plants and other organisms living in the soil; the relief of the land and its effect on runoff and soil moisture conditions; and the length of time it took the soil to form (*4, 6*).

The effect of anyone factor can differ from place to place, but the interaction of all the factors determines the kind of soil that forms. Because of this interaction, many of the differences in soils cannot be attributed to differences in only one factor. For example, organic matter content of soils in Pointe Coupee and West Baton Rouge Parishes is influenced by several factors, including relief, parent material, and living organisms. Such interactions do not preclude recognition of the manner in which a factor can influence a specific soil property. In the following paragraphs the factors of soil formation are discussed as they relate to the soils in the survey area.

### parent material

The parent material for mineral soils is the initial material from which the soils form. The soils in Pointe Coupee and West Baton Rouge Parishes are mineral soils that formed mainly in unconsolidated Atchafalaya River, Mississippi River, and Red River sediment of the natural levees and associated backswamps.

Sediment carried by the Atchafalaya and Mississippi Rivers is of varied origin and may have originated anywhere in a drainage area that extends from western Montana to eastern Pennsylvania. Sorting of the sediment during deposition, together with a diverse mineralogy, results in marked differences in the parent material of soils formed in alluvium. Mineralogical studies (*3*) of the alluvium indicate that smectite minerals are predominant in the clay-size fraction, with secondary amounts of micaceous clays. Associated with these are lesser amounts of kaolinite, chlorite-vermiculite intergrade, and quartz minerals. The sand and silt-sized fractions are made up largely of quartz with a sizable component of feldspars and smaller amounts of a variety of minerals, including such readily weatherable components as biotite and hornblende.

Mississippi River sediment does not have detectable quantities of calcium carbonate when it is deposited. By comparison, Red River sediment contains less smectite and more micaceous clays in the clay-sized fraction and does contain calcium carbonate at the time of deposition. The Red River alluvium gets its reddish color from oxides of iron associated with the sand, silt, and particularly the clay-sized fraction. Reddish Permean age formations exposed in western parts of the drainage basin are the major source of this red sediment.

Partial sorting of the alluvium takes place when the stream overflows and the initial decrease in velocity and transporting capability of the water result in rapid deposition of sediment. As the velocity of the water decreases, the initial deposits are high in sand. These deposits are followed by sediment high in silt which, in turn, is followed by more clayey material.

The clayey backswamp sediment is deposited from still or slowly moving water in low areas back of the natural levees. Consequently, the natural levees are highest and have the greatest sand content near the river. They characteristically have long gentle slopes extending away from the river to the clayey, backswamp deposits.

The Convent, Commerce, and Sharkey soils formed in coarse, intermediate, and fine textured parent material. A

number of differences in these soils can be attributed, wholly or in part, to differences in the parent material. For example, cation exchange capacity, organic matter content, and volume changes upon wetting and drying all increase as the amount of clay increases in the soils. Soil permeability, soil aeration, and content of readily weatherable minerals decrease as the amount of clay increases. Consequently, the silty soils are generally more productive for most agricultural crops and also provide the most desirable sites in the parish for most urban and industrial uses.

The Fausse soils formed in clayey deposits similar in nature to the parent material of the Sharkey soils. The major differences between Fausse and Sharkey soils are caused by factors other than parent material differences. The Tunica soils formed in areas where clayey alluvium less than 36 inches thick overlies loamy alluvium. Vacherie soils, on the other hand, formed in parent material where loamy alluvium less than 36 inches thick overlies clayey alluvium.

Sediment carried by the Red River originated mainly from the reddish prairie soils of Oklahoma and Texas. The soils formed in this sediment is typically reddish brown, alkaline, and calcareous. The Norwood soils formed in recent loamy sediment of the Red River. The Sterlington soils formed in older loamy sediment carried by either the Arkansas or the Red River. In the northwestern part of Pointe Coupee Parish, the sediment deposited by the Red or Arkansas River has been covered by more recent sediment deposited by the Mississippi River. In this area some of the soils, such as Bruin, Commerce, Convent, and Sharkey soils, have reddish brown sediment deposited by the Red River in the lower part of the subsoil.

### climate

Pointe Coupee and West Baton Rouge Parishes have a humid, subtropical climate. A detailed discussion of the climate in these parishes appears in the section "General nature of the survey area." Because of the relatively young age of most of the parent material, the soils in the survey area developed under climatic conditions similar to the present.

The climate is relatively uniform throughout the parish and, as a result, local differences in the soils are not caused by differences in atmospheric climate. The warm average temperatures and large amount of precipitation favor a rapid rate of weathering of minerals in the soils. The soils are only slightly weathered because they have been exposed to weathering agents for only short periods of time. Weathering and leaching have occurred to some extent in most of the soils. This is indicated by soil reactions that become more alkaline with depth and by the absence of free carbonates in the upper horizons of such soils as Convent soil. Weathering processes involving the release and reduction of iron are indicated in soils, such as Fausse and Sharkey soils, that have gray Bg or Cg horizons. Oxidation and segregation of iron as a result of alternating oxidizing and reducing conditions are indicated by mottled horizons in many of the soils.

Another important facet of climate is expressed in the clayey soils with large amounts of expanding lattice minerals, where volume changes upon wetting and drying. Wetting and drying cycles and associated volume changes are important factors in the formation and stabilization of structural aggregates in these soils. When the wet soils dry, cracks of variable width and depth tend to form as a result of the decrease in volume. When cracks form, the depth and extent of cracking are influenced by climate. Repeated volume changes frequently result in structural damage to buildings, roads, and other structures built on the soils.

Formation of deep, wide cracks may shear roots of plants growing in the soil. When cracks are present, much of the water from initial rainfall or irrigation infiltrates through the cracks. Once the soil has become wet, infiltration rates become slow or very slow. Formation of cracks occurs extensively in the Alligator, Sharkey, and Tunica soils late in summer and early in fall when the soils are driest. During this time, cracks of an inch or more in width and extending to depths of more than 20 inches may form in most years. Cracks that are less extensive and less deep sometimes form in the more silty Commerce and Mhoon soils and in the clayey Fausse soils. Fausse soils dry out to a shallower depth than do the Sharkey soils and, as a result, do not crack so deep. Cracks do not form in the loamy Bruin or Convent soils.

### time

The kinds of horizons and their degree of development within a soil are influenced by the length of time of soil formation. Long periods of time are generally required for the soils to form prominent horizons. In many areas, the differences in the time of soil formation for different soils may amount to several thousand years. In these areas, large differences may exist among the soils, largely because of differences in the time of soil formation (*4, 6*).

The Commerce, Convent, Mhoon, Robinsonville, Sharkey, Tunica, and Vacherie soils are thought to be the youngest soils in the survey area. They developed in the most recent alluvium, which is probably less than 3,000 years old. Alligator, Bruin, Dundee, and Sterlington soils formed in somewhat older alluvium, which is thought to be as old as 7,000 years (*8*).

The youngest soils have only faint profile development. For example, Commerce soils retain many of the characteristics of their alkaline, loamy parent material. Evidence of the faint development is a darkening of the A horizon by organic matter and a weakly developed B horizon. Convent and Robinsonville soils have even less profile development. About the only

evidence of age of these soils is the darkening of the A horizon by organic matter and removal of some of the carbonates.

In contrast, Alligator, Dundee, and Sterlington soils, all of which formed in older parent material, have distinct profile development. They have been leached of most carbonates and other soluble salts and are acid. Fine clay has moved downward from the A horizon to form a strongly developed clay loam Bt horizon.

**relief**

Relief and other physiographic features influence soil formation processes mainly by affecting internal soil drainage, runoff erosion and deposition, and exposure to the sun and wind. In Pointe Coupee and West Baton Rouge Parishes, the sediment accumulated at faster rates than erosion occurred. Under these conditions, accumulation of sediment occurred at a faster rate than many of the processes of soil formation. This fact is evident in the absence of B horizons in such soils as Convent and Robinsonville soils and in distinct stratification in the lower horizons of some soils. Levee construction and other water control measures appear to have reversed this trend for such soils as Convent and Commerce soils and some others. Soil slope and rate of runoff are low enough that erosion is not a major problem on these soils in the survey area.

An important feature of Pointe Coupee and West Baton Rouge Parishes is the level to gently undulating land surface. With few exceptions, the entire area is characterized by soils that have slopes of less than 3 percent. Slopes range to 5 percent in the undulating Alligator and Dundee soils. Relief and landscape position have had an important influence on formation of the different soils. Characteristically, the slopes are long and extend from highest elevations on the natural levees to elevations that are several feet lower in the backswamp areas.

Differences in the clayey Sharkey and Fausse soils illustrate the influence of relief on the soils in the parishes. Fausse soils are in the lowest, ponded, backswamp areas, and Sharkey soils are predominantly on higher elevations in the backswamp and in the lower parts of the natural levees. As compared to clayey soils at higher elevation, Fausse soils in lower elevations have higher organic matter content, are more poorly drained, have thinner sola, and crack to a shallower depth during dry seasons.

From highest to lowest elevations, the predominant soils typically are Convent, Commerce, Sharkey, and Fausse soils. Soils at lower elevation receive runoff from those at higher elevation, and the water table is nearer the surface for longer periods of time in the soils at lower elevations. For example, Convent soils are somewhat poorly drained, with a water table between a depth of 1.5 and 4 feet for only short periods during most years. Fausse soils are very poorly drained and often submerged, with a water table that fluctuates from about 12 inches above the surface to a depth of 1 1/2 feet or less during all seasons. Differences in the organic matter content of the soils are related to the internal drainage of the soils and, consequently, to relief. Organic matter content generally increases as internal soil drainage becomes more restricted.

The Convent, Norwood, and Sterlington soils are in the higher and better drained positions and have an environment in which more extensive oxidation of organic matter occurs. The very poorly drained Fausse soils are covered with water for extended periods, resulting in an environment that promotes greater reduction and in the accumulation of more organic matter in the surface layer.

**living organisms**

Living organisms exert a major influence on the kind and extent of soil horizons that develop. Growth of plants and activity of other organisms physically disturb the soil. They modify the porosity, influence the tilth, and affect the incorporation of organic matter into the soil.

In photosynthesis, plants use energy from the sun to synthesize compounds needed for growth. In this way, they produce additional organic matter. Growth of plants and their eventual decomposition provide for recycling of nutrients from the soil and serve as a major source of organic residue.

Decomposition and incorporation of organic matter by micro-organisms enhance the tilth and generally increase the infiltration rate and water-holding capacity in soils. Relatively stable organic compounds in soils generally have high cation exchange capacities and consequently increase the capacity of the soils to absorb and store such nutrients as calcium, magnesium, and potassium. The extent of these and other processes and the kind of organic matter produced can vary widely, depending on the kinds of organisms living in and on the soil. As a result, large differences in soils may result in areas that have widely contrasting populations of plants and other organisms.

The native vegetation in Pointe Coupee and West Baton Rouge Parishes consists mainly of hardwood forests and associated understory and ground cover. Cottonwood, sycamore, and pecan trees are predominant on the higher and better drained Convent, Commerce, and Sterlington soils. Oak, sweetgum, and green ash trees are predominant on the clayey, poorly drained Alligator and Sharkey soils. The native forest on the clayey, very poorly drained Fausse soils includes baldcypress, water tupelo, and water hickory.

Differences in the amount of organic matter that accumulates in and on the soils are influenced by the kinds and populations of micro-organisms. Aerobic organisms use oxygen from the air and are chiefly responsible for organic matter decomposition through rapid oxidation of organic residue. These organisms are

most abundant and prevail for longer periods in the better drained and aerated soils, such as Bruin, Norwood, Robinsonville, and Sterlington soils.

In the most poorly drained soils, anerobic organisms are predominant throughout most or all of the year. Anerobic organisms do not require oxygen from the air and decompose organic residue very slowly. Differences in decomposition by micro-organisms can result in large accumulations of organic matter in the poorly drained soils, such as Fausse soils. In the better drained soils, such as Bruin and Sterlington soils, the accumulation is much less.

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# glossary

**Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

| | *Inches* |
|---|---|
| Very low | 0 to 3 |
| Low | 3 to 6 |
| Moderate | 6 to 9 |
| High | 9 to 12 |
| Very high | More than 12 |

**Bedding planes.** Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

**Bottom land.** The normal flood plain of a stream, subject to flooding.

**Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

**Chiseling.** Tillage with an implement having one or more soil-penetrating points that loosen the subsoil and bring clods to the surface. A form of emergency tillage to control soil blowing.

**Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Complex, soil.** A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

**Concretions.** Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

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

**Consistence, soil.** The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

*Loose.*—Noncoherent when dry or moist; does not hold together in a mass.

*Friable.*—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

*Firm.*—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

*Plastic.*—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

*Sticky.*—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

*Hard.*—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

*Soft.*—When dry, breaks into powder or individual grains under very slight pressure.

*Cemented.*—Hard; little affected by moistening.

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

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

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

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

**Deferred grazing.** Postponing grazing or arresting grazing for a prescribed period.

**Drainage class** (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

*Excessively drained.*—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

*Somewhat excessively drained.*—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

*Well drained.*—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

*Moderately well drained.*—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

*Somewhat poorly drained.*—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

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

*Very poorly drained.*—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

*Erosion* (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

*Erosion* (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

**Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

**Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grains are grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

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

**Fine textured soil.** Sandy clay, silty clay, and clay.

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

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

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

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

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

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

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

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

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

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Low strength.** The soil is not strong enough to support loads.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Muck.** Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Munsell notation.** A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

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

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

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

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The downward movement of water through the soil.

**Percs slowly** (in tables). The slow movement of water through the soil adversely affecting the specified use.

**Permeability.** The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

| | |
|---|---|
| Very slow | less than 0.06 inch |
| Slow | 0.06 to 0.20 inch |
| Moderately slow | 0.2 to 0.6 inch |
| Moderate | 0.6 inch to 2.0 inches |
| Moderately rapid | 2.0 to 6.0 inches |
| Rapid | 6.0 to 20 inches |
| Very rapid | more than 20 inches |

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

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

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Plowpan.** A compacted layer formed in the soil directly below the plowed layer.

**Ponding.** Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

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

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

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction

because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

| | *pH* |
|---|---|
| Extremely acid | Below 4.5 |
| Very strongly acid | 4.5 to 5.0 |
| Strongly acid | 5.1 to 5.5 |
| Medium acid | 5.6 to 6.0 |
| Slightly acid | 6.1 to 6.5 |
| Neutral | 6.6 to 7.3 |
| Mildly alkaline | 7.4 to 7.8 |
| Moderately alkaline | 7.9 to 8.4 |
| Strongly alkaline | 8.5 to 9.0 |
| Very strongly alkaline | 9.1 and higher |

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

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

**Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and runoff water.

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

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

**Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

**Slickensides.** Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

**Slow intake** (in tables). The slow movement of water into the soil.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

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

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

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

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

# tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1965-77 at Old River Lock, La.]

| Month | Temperature | | | | | | Precipitation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Average daily maximum | Average daily minimum | Average daily | 2 years in 10 will have-- Maximum temperature higher than-- | 2 years in 10 will have-- Minimum temperature lower than-- | Average number of growing degree days[1] | Average | 2 years in 10 will have-- Less than-- | 2 years in 10 will have-- More than-- | Average number of days with 0.10 inch or more | Average snowfall |
| | °F | °F | °F | °F | °F | Units | In | In | In | | In |
| January | 58.6 | 37.7 | 48.2 | 80 | 17 | 137 | 5.26 | 2.19 | 7.74 | 7 | .2 |
| February | 62.5 | 38.5 | 50.5 | 81 | 21 | 110 | 4.47 | 2.43 | 6.12 | 6 | .2 |
| March | 69.6 | 47.0 | 58.3 | 85 | 27 | 293 | 5.16 | 2.88 | 7.01 | 7 | .0 |
| April | 78.0 | 55.9 | 66.9 | 87 | 38 | 507 | 6.16 | 2.02 | 9.45 | 6 | .0 |
| May | 83.6 | 61.9 | 73.0 | 93 | 47 | 713 | 5.83 | 2.96 | 8.17 | 7 | .0 |
| June | 90.1 | 68.3 | 79.2 | 97 | 56 | 876 | 2.92 | 1.15 | 4.35 | 5 | .0 |
| July | 91.5 | 70.8 | 81.2 | 99 | 62 | 967 | 5.14 | 3.50 | 6.64 | 9 | .0 |
| August | 90.6 | 70.0 | 80.3 | 97 | 61 | 939 | 4.24 | 2.03 | 6.05 | 8 | .0 |
| September | 86.7 | 66.1 | 76.4 | 96 | 49 | 792 | 5.63 | 2.02 | 8.52 | 8 | .0 |
| October | 78.7 | 54.2 | 66.5 | 92 | 37 | 512 | 3.41 | 1.22 | 5.16 | 4 | .0 |
| November | 69.4 | 45.0 | 57.2 | 85 | 25 | 261 | 4.88 | 1.26 | 7.76 | 6 | .0 |
| December | 62.8 | 39.9 | 51.4 | 82 | 21 | 125 | 7.04 | 4.21 | 9.57 | 8 | .0 |
| Yearly: | | | | | | | | | | | |
| Average | 76.8 | 54.6 | 65.8 | --- | --- | --- | --- | --- | --- | --- | --- |
| Extreme | --- | --- | --- | 99 | 16 | --- | --- | --- | --- | --- | --- |
| Total | --- | --- | --- | --- | --- | 6,232 | 60.14 | 52.39 | 67.62 | 81 | .4 |

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

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1965-77 at Old River Lock, La.]

| Probability | Temperature | | |
|---|---|---|---|
| | 24°F or lower | 28°F or lower | 32°F or lower |
| Last freezing temperature in spring: | | | |
| 1 year in 10 later than-- | February 21 | March 16 | March 26 |
| 2 years in 10 later than-- | February 14 | March 7 | March 20 |
| 5 years in 10 later than-- | January 31 | February 17 | March 7 |
| First freezing temperature in fall: | | | |
| 1 year in 10 earlier than-- | November 18 | November 5 | October 30 |
| 2 years in 10 earlier than-- | December 1 | November 15 | November 5 |
| 5 years in 10 earlier than-- | December 27 | December 6 | November 16 |

TABLE 3.--GROWING SEASON

[Recorded in the period 1965-77 at Old River Lock, La.]

| Probability | Daily minimum temperature during growing season | | |
|---|---|---|---|
| | Higher than 24°F | Higher than 28°F | Higher than 32°F |
| | Days | Days | Days |
| 9 years in 10 | 289 | 261 | 228 |
| 8 years in 10 | 301 | 271 | 237 |
| 5 years in 10 | 328 | 291 | 253 |
| 2 years in 10 | >365 | 310 | 270 |
| 1 year in 10 | >365 | 321 | 279 |

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

| Map unit | Extent of area | Cultivated crops | Pasture | Woodland | Urban uses | Intensive recreation areas |
|---|---|---|---|---|---|---|
| | Pct | | | | | |
| Commerce-Bruin-Convent- | 44 | Well suited----- | Well suited----- | Well suited----- | Moderately well suited: wetness, shrink-swell, percs slowly, low strength. | Well to moderately well suited: wetness, percs slowly, slope. |
| Dundee-Alligator------- | 2 | Moderately well suited: wetness, poor tilth. | Well suited----- | Well suited----- | Moderately well to poorly suited: wetness, percs slowly, low strength, too clayey, shrink-swell. | Moderately well to poorly suited: wetness, percs slowly, slope, too clayey. |
| Sharkey-Tunica--------- | 3 | Moderately well suited: wetness, poor tilth. | Well suited----- | Well suited----- | Poorly suited: wetness, shrink-swell, percs slowly, low strength, too clayey. | Poorly suited: wetness, percs slowly, too clayey. |
| Sharkey---------- | 20 | Moderately well suited: wetness, poor tilth. | Well suited----- | Well suited----- | Poorly suited: wetness, shrink-swell, percs slowly, low strength, too clayey. | Poorly suited: wetness, percs slowly, too clayey. |
| Sharkey, occasionally flooded---------- | 4 | Poorly suited: floods, wetness, poor tilth. | Moderately well suited: floods, wetness. | Moderately well suited: floods, wetness. | Poorly suited: floods, wetness, shrink-swell, low strength, percs slowly, too clayey. | Poorly suited: floods, wetness, percs slowly, too clayey. |
| Sharkey, frequently flooded---------- | 2 | Not suited: floods, wetness. | Poorly suited: floods. | Moderately well suited: floods, wetness. | Not suited: floods, wetness. | Not suited: floods, wetness. |
| Convent, occasionally flooded---------- | 2 | Moderately well suited: floods, wetness. | Well suited----- | Well suited----- | Poorly suited: floods, wetness. | Poorly suited: floods, wetness. |
| Sharkey-Commerce, occasionally flooded- | 10 | Poorly suited: floods, wetness, poor tilth. | Well to moderately well suited: floods, wetness. | Well to moderately well suited: floods, wetness. | Poorly suited: floods, wetness. | Poorly suited: floods, wetness, percs slowly, too clayey. |
| Sharkey-Fausse, frequently flooded--- | 3 | Not suited: floods, wetness. | Poorly suited: floods, wetness. | Moderately well to poorly suited: floods, wetness. | Not suited: floods, wetness. | Not suited: floods, wetness. |
| Robinsonville-Commerce, occasionally flooded- | 10 | Moderately well suited: floods, wetness. | Well suited----- | Well suited----- | Poorly suited: floods, wetness. | Moderately well suited: floods, wetness. |

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

| Map symbol | Soil name | Pointe Coupee Parish | West Baton Rouge Parish | Total-- Area | Total-- Extent |
|---|---|---|---|---|---|
| | | Acres | Acres | Acres | Pct |
| Bn | Bruin very fine sandy loam | 4,990 | 1,140 | 6,130 | 1.2 |
| Br | Bruin very fine sandy loam, gently undulating | 6,150 | 0 | 6,150 | 1.2 |
| Ce | Commerce silt loam | 47,860 | 18,500 | 66,360 | 13.0 |
| Cm | Commerce silty clay loam | 73,948 | 22,776 | 96,724 | 18.9 |
| Co | Commerce silty clay loam, gently undulating | 7,780 | 640 | 8,420 | 1.6 |
| Cp | Commerce silty clay loam, occasionally flooded | 6,200 | 630 | 6,830 | 1.3 |
| CR | Commerce soils, occasionally flooded | 22,100 | 0 | 22,100 | 4.3 |
| Ct | Convent silt loam | 6,230 | 4,510 | 10,740 | 2.1 |
| CV | Convent soils, occasionally flooded | 7,640 | 0 | 7,640 | 1.5 |
| De | Dundee-Alligator complex, undulating | 7,220 | 0 | 7,220 | 1.4 |
| Fa | Fausse clay, frequently flooded | 6,410 | 650 | 7,060 | 1.4 |
| FS | Fausse soils, frequently flooded | 3,940 | 0 | 3,940 | 0.8 |
| Mh | Mhoon silty clay loam | 2,680 | 40 | 2,720 | 0.5 |
| Nd | Norwood silt loam | 1,680 | 0 | 1,680 | 0.3 |
| RE | Robinsonville and Commerce soils, occasionally flooded | 39,820 | 12,530 | 52,350 | 10.2 |
| Se | Sharkey silty clay loam | 4,080 | 1,540 | 5,620 | 1.1 |
| Sf | Sharkey clay | 24,440 | 59,910 | 84,350 | 16.5 |
| Sh | Sharkey clay, occasionally flooded | 23,960 | 0 | 23,960 | 4.7 |
| Sk | Sharkey clay, frequently flooded | 12,740 | 160 | 12,900 | 2.5 |
| Sm | Sharkey-Tunica complex, gently undulating | 9,410 | 30 | 9,440 | 1.8 |
| SN | Sharkey soils, occasionally flooded | 25,040 | 0 | 25,040 | 4.9 |
| SO | Sharkey soils, frequently flooded | 8,220 | 0 | 8,220 | 1.6 |
| St | Sterlington silt loam | 5,530 | 0 | 5,530 | 1.1 |
| Tc | Tunica clay | 1,070 | 2,360 | 3,430 | 0.7 |
| Vc | Vacherie silt loam | 170 | 3,780 | 3,950 | 0.8 |
| | Water (small areas) | 1,140 | 660 | 1,800 | 0.4 |
| | Water (large areas) | 15,872 | 5,824 | 21,696 | 4.2 |
| | Total | 376,320 | 135,680 | 512,000 | 100.0 |

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

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

| Map symbol and soil name | Soybeans | Sugarcane | Rice | Common bermudagrass | Improved bermudagrass |
|---|---|---|---|---|---|
| | Bu | Ton | Bu | AUM* | AUM* |
| Bn---------- Bruin | 40 | 35 | --- | 8.5 | 15.5 |
| Br---------- Bruin | 35 | 32 | --- | 8.5 | 15.5 |
| Ce---------- Commerce | 40 | 35 | --- | 8.0 | 15.5 |
| Cm---------- Commerce | 35 | 32 | --- | 7.5 | 15.0 |
| Co---------- Commerce | 30 | 30 | --- | 7.0 | 14.5 |
| Cp, CR---------- Commerce | 30 | --- | --- | 7.0 | --- |
| Ct---------- Convent | 40 | 32 | --- | 8.0 | 15.5 |
| CV---------- Convent | 35 | --- | --- | 7.5 | --- |
| De**---------- Dundee-Alligator | 35 | --- | --- | 7.0 | --- |
| Fa, FS---------- Fausse | --- | --- | --- | --- | --- |
| Mh---------- Mhoon | 35 | 28 | --- | 8.0 | 13.0 |
| Nd---------- Norwood | 40 | --- | --- | 7.5 | 15.0 |
| RE---------- Robinsonville and Commerce | 37 | --- | --- | 7.0 | --- |
| Se, Sf---------- Sharkey | 40 | 30 | 130 | 6.5 | --- |
| Sh---------- Sharkey | 30 | --- | 110 | 6.0 | --- |
| Sk---------- Sharkey | --- | --- | --- | 5.0 | --- |
| Sm---------- Sharkey-Tunica | 32 | --- | --- | 6.0 | --- |
| SN---------- Sharkey | 30 | --- | --- | 6.0 | --- |
| SO---------- Sharkey | --- | --- | --- | 5.0 | --- |
| St---------- Sterlington | 35 | --- | --- | 7.0 | 15.5 |
| Tc---------- Tunica | 35 | --- | --- | 6.5 | 10.5 |

See footnotes at end of table.

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

| Map symbol and soil name | Soybeans | Sugarcane | Rice | Common bermudagrass | Improved bermudagrass |
|---|---|---|---|---|---|
| | Bu | Ton | Bu | AUM* | AUM* |
| Vc----------<br>Vacherie | 40 | 33 | --- | 8.0 | --- |

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.
** Yields are for areas protected from flooding.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

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

| Map symbol and soil name | Ordination symbol | Management concerns | | | Potential productivity | | Trees to plant |
|---|---|---|---|---|---|---|---|
| | | Erosion hazard | Equipment limitation | Seedling mortality | Common trees | Site index | |
| Bn, Br---------- Bruin | 1o4 | Slight | Slight | Slight | Green ash---------- | --- | Eastern cottonwood, sweetgum, American sycamore. |
| | | | | | Eastern cottonwood----- | 105 | |
| | | | | | Pecan---------- | --- | |
| | | | | | Sweetgum---------- | 105 | |
| | | | | | American sycamore------ | --- | |
| Ce, Cm, Co, Cp, CR*---------- Commerce | 1w5 | Slight | Moderate | Slight | Green ash---------- | 80 | Eastern cottonwood, American sycamore. |
| | | | | | Eastern cottonwood----- | 120 | |
| | | | | | Nuttall oak---------- | 90 | |
| | | | | | Water oak---------- | 110 | |
| | | | | | Pecan---------- | --- | |
| | | | | | American sycamore------ | --- | |
| Ct, CV*---------- Convent | 1w5 | Slight | Moderate | Slight | Green ash---------- | 80 | Eastern cottonwood, American sycamore. |
| | | | | | Eastern cottonwood----- | 120 | |
| | | | | | Sweetgum---------- | 110 | |
| | | | | | American sycamore------ | --- | |
| | | | | | Nuttall oak---------- | 90 | |
| | | | | | Water oak---------- | --- | |
| | | | | | Pecan---------- | --- | |
| De:* Dundee---------- | 2w5 | Slight | Moderate | Slight | Cherrybark oak--------- | 105 | Cherrybark oak, eastern cottonwood, sweetgum, water oak, yellow-poplar. |
| | | | | | Eastern cottonwood----- | 100 | |
| | | | | | Sweetgum---------- | 100 | |
| | | | | | Water oak---------- | 95 | |
| Alligator--------- | 2w6 | Slight | Severe | Moderate | Eastern cottonwood----- | 95 | Eastern cottonwood, green ash, sweetgum, American sycamore. |
| | | | | | Green ash---------- | 80 | |
| | | | | | Water oak---------- | 90 | |
| | | | | | Sweetgum---------- | 90 | |
| Fa, FS---------- Fausse | 4w6 | Slight | Slight | Severe | Green ash---------- | 70 | Baldcypress. |
| | | | | | Baldcypress---------- | --- | |
| | | | | | Sweetgum---------- | --- | |
| | | | | | Water hickory---------- | --- | |
| | | | | | Water tupelo---------- | --- | |
| Mh---------- Mhoon | 1w6 | Slight | Severe | Moderate | Green ash---------- | 90 | Eastern cottonwood, American sycamore. |
| | | | | | Eastern cottonwood----- | 110 | |
| | | | | | Water oak---------- | --- | |
| | | | | | Cherrybark oak--------- | --- | |
| | | | | | Sweetgum---------- | 100 | |
| | | | | | American sycamore------ | --- | |
| Nd---------- Norwood | 2o4 | Slight | Slight | Slight | Eastern cottonwood----- | 100 | Eastern cottonwood. |
| | | | | | | --- | |
| RE:* Robinsonville----- | 1o4 | Slight | Slight | Slight | Eastern cottonwood----- | 110 | Eastern cottonwood, sweetgum, American sycamore. |
| | | | | | Green ash---------- | 85 | |
| | | | | | Sweetgum---------- | 105 | |
| | | | | | American sycamore------ | 115 | |
| Commerce---------- | 1w5 | Slight | Moderate | Slight | Green ash---------- | 80 | Eastern cottonwood, American sycamore. |
| | | | | | Eastern cottonwood----- | 120 | |
| | | | | | Nuttall oak---------- | 90 | |
| | | | | | Water oak---------- | 110 | |
| | | | | | Pecan---------- | --- | |
| | | | | | American sycamore------ | --- | |

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

| Map symbol and soil name | Ordination symbol | Management concerns | | | Potential productivity | | Trees to plant |
|---|---|---|---|---|---|---|---|
| | | Erosion hazard | Equipment limitation | Seedling mortality | Common trees | Site index | |
| Se, Sf---------- Sharkey | 2w6 | Slight | Severe | Moderate | Green ash---------- | 85 | Eastern cottonwood, American sycamore, sweetgum. |
| | | | | | Eastern cottonwood----- | 100 | |
| | | | | | Cherrybark oak--------- | 90 | |
| | | | | | Sweetgum---------- | 90 | |
| | | | | | Water oak---------- | --- | |
| | | | | | Pecan---------- | --- | |
| | | | | | American sycamore------ | --- | |
| Sh, Sk---------- Sharkey | 3w6 | Slight | Severe | Severe | Green ash---------- | --- | Eastern cottonwood, sweetgum. |
| | | | | | Eastern cottonwood----- | --- | |
| Sm:* Sharkey---------- | 2w6 | Slight | Severe | Moderate | Green ash---------- | 85 | Eastern cottonwood, American sycamore, sweetgum. |
| | | | | | Eastern cottonwood----- | 100 | |
| | | | | | Cherrybark oak--------- | 90 | |
| | | | | | Sweetgum---------- | 90 | |
| | | | | | Water oak---------- | --- | |
| | | | | | Pecan---------- | --- | |
| | | | | | American sycamore------ | --- | |
| Tunica---------- | 2w6 | Slight | Severe | Moderate | Cherrybark oak--------- | 90 | Cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum, American sycamore. |
| | | | | | Eastern cottonwood----- | 105 | |
| | | | | | Green ash---------- | 100 | |
| | | | | | Nuttall oak---------- | 105 | |
| | | | | | Sweetgum---------- | 90 | |
| SN,* SO*---------- Sharkey | 3w6 | Slight | Severe | Severe | Green ash---------- | --- | Eastern cottonwood, sweetgum. |
| | | | | | Eastern cottonwood----- | --- | |
| St---------- Sterlington | 2o4 | Slight | Slight | Slight | Green ash---------- | 75 | Eastern cottonwood. |
| | | | | | Eastern cottonwood----- | --- | |
| | | | | | Cherrybark oak--------- | 95 | |
| | | | | | Water oak---------- | 90 | |
| | | | | | Pecan---------- | --- | |
| | | | | | Sweetgum---------- | 90 | |
| Tc---------- Tunica | 2w6 | Slight | Severe | Moderate | Cherrybark oak--------- | 90 | Cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum, American sycamore. |
| | | | | | Eastern cottonwood----- | 105 | |
| | | | | | Green ash---------- | 100 | |
| | | | | | Nuttall oak---------- | 105 | |
| | | | | | Sweetgum---------- | 90 | |
| Vc---------- Vacherie | 1w5 | Slight | Moderate | Slight | Green ash---------- | --- | Eastern cottonwood, American sycamore. |
| | | | | | Eastern cottonwood----- | 120 | |
| | | | | | Sweetgum---------- | 110 | |
| | | | | | American sycamore------ | --- | |

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

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe"]

| Soil name and map symbol | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|---|---|---|---|---|---|
| Bn, Br<br>Bruin | Slight | Slight | Slight | Slight | Slight. |
| Ce<br>Commerce | Moderate: wetness, percs slowly. | Moderate: wetness, percs slowly. | Moderate: wetness. | Severe: erodes easily. | Moderate: wetness. |
| Cm, Co<br>Commerce | Moderate: wetness, percs slowly. | Moderate: wetness, percs slowly. | Moderate: wetness. | Moderate: wetness. | Moderate: wetness. |
| Cp<br>Commerce | Severe: flooding. | Moderate: wetness, percs slowly. | Moderate: wetness, flooding. | Moderate: wetness. | Moderate: wetness, flooding. |
| CR*<br>Commerce | Severe: flooding. | Moderate: wetness, percs slowly. | Moderate: wetness, flooding. | Severe: erodes easily. | Moderate: wetness, flooding. |
| Ct<br>Convent | Moderate: wetness. | Moderate: wetness. | Moderate: wetness. | Severe: erodes easily. | Moderate: wetness. |
| CV*<br>Convent | Severe: flooding. | Moderate: wetness. | Moderate: wetness, flooding. | Severe: erodes easily. | Moderate: wetness, flooding. |
| De:*<br>Dundee | Moderate: wetness, too clayey. | Moderate: wetness, percs slowly. | Moderate: wetness, slope. | Moderate: wetness. | Moderate: wetness. |
| Alligator | Severe: wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: wetness. | Severe: wetness, too clayey. | Severe: wetness. |
| Fa, FS*<br>Fausse | Severe: flooding, ponding, percs slowly. | Severe: ponding, too clayey, excess humus. | Severe: too clayey, excess humus, ponding. | Severe: ponding, too clayey, excess humus. | Severe: ponding, flooding, too clayey. |
| Mh<br>Mhoon | Severe: wetness. | Severe: wetness. | Severe: wetness. | Severe: wetness, erodes easily. | Severe: wetness. |
| Nd<br>Norwood | Slight | Slight | Slight | Severe: erodes easily. | Slight. |
| RE:*<br>Robinsonville | Severe: flooding. | Slight | Moderate: flooding. | Slight | Moderate: flooding. |
| Commerce | Severe: flooding. | Moderate: wetness, percs slowly. | Moderate: wetness, flooding. | Severe: erodes easily. | Moderate: wetness, flooding. |
| Se<br>Sharkey | Severe: wetness, percs slowly. | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. |
| Sf<br>Sharkey | Severe: wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness. | Severe: wetness, too clayey. | Severe: wetness, too clayey. |

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

| Soil name and map symbol | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|---|---|---|---|---|---|
| Sh<br>Sharkey | Severe: flooding, wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness. | Severe: wetness, too clayey. | Severe: wetness, too clayey. |
| Sk<br>Sharkey | Severe: flooding, wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness, flooding. | Severe: wetness, too clayey. | Severe: wetness, flooding, too clayey. |
| Sm:*<br>Sharkey | Severe: wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness. | Severe: wetness, too clayey. | Severe: wetness, too clayey. |
| Tunica | Severe: percs slowly, too clayey. | Severe: too clayey, percs slowly. | Severe: percs slowly, too clayey. | Severe: too clayey. | Severe: too clayey. |
| SN*<br>Sharkey | Severe: flooding, wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness. | Severe: wetness, too clayey. | Severe: wetness, too clayey. |
| SO*<br>Sharkey | Severe: flooding, wetness, percs slowly. | Severe: wetness, too clayey, percs slowly. | Severe: too clayey, wetness, flooding. | Severe: wetness, too clayey. | Severe: wetness, flooding, too clayey. |
| St<br>Sterlington | Slight | Slight | Slight | Severe: erodes easily. | Slight. |
| Tc<br>Tunica | Severe: percs slowly, too clayey. | Severe: too clayey, percs slowly. | Severe: percs slowly, too clayey. | Severe: too clayey. | Severe: too clayey. |
| Vc<br>Vacherie | Severe: wetness, percs slowly. | Severe: percs slowly. | Severe: wetness, percs slowly. | Severe: erodes easily. | Moderate: wetness. |

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

TABLE 9.--WILDLIFE HABITAT

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

| Map symbol and soil name | Potential for habitat elements | | | | | | | Potential as habitat for- | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Grain and seed crops | Grasses and legumes | Wild herbaceous plants | Hardwood trees | Shrubs | Wetland plants | Shallow water areas | Openland wildlife | Woodland wildlife | Wetland wildlife |
| Bn, Br---------- Bruin | Good | Good | Good | Good | Good | Poor | Poor | Good | Good | Poor |
| Ce---------- Commerce | Good | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| Cm---------- Commerce | Good | Good | Good | Good | Good | Fair | Poor | Good | Good | Poor |
| Co---------- Commerce | Good | Good | Good | Good | Good | Fair | Poor | Good | Good | Poor |
| Cp, CR*---------- Commerce | Good | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| Ct---------- Convent | Good | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| CV*---------- Convent | Fair | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| De:* | | | | | | | | | | |
| Dundee---------- | Fair | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| Alligator---------- | Fair | Fair | Fair | Fair | Good | Good | Good | Fair | Fair | Good |
| Fa, FS*---------- Fausse | Very poor. | Very poor. | Very poor. | Poor | Poor | Good | Good | Very poor. | Poor | Good |
| Mh---------- Mhoon | Fair | Fair | Fair | Good | Good | Good | Good | Fair | Good | Good |
| Nd---------- Norwood | Good | Good | Fair | --- | Good | Poor | Very poor. | Good | --- | Very poor. |
| RE:* | | | | | | | | | | |
| Robinsonville----- | Good | Good | Good | Good | Good | Poor | Very poor. | Good | Good | Very poor. |
| Commerce---------- | Good | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |
| Se, Sf---------- Sharkey | Fair | Fair | Fair | Good | Good | Good | Good | Fair | Good | Good |
| Sh---------- Sharkey | Fair | Fair | Fair | Good | Good | Good | Good | Fair | Good | Good |
| Sk---------- Sharkey | Poor | Fair | Fair | Good | Fair | Fair | Fair | Poor | Fair | Fair |
| Sm:* | | | | | | | | | | |
| Sharkey---------- | Fair | Fair | Fair | Good | Good | Good | Poor | Fair | Good | Fair |
| Tunica---------- | Fair | Fair | Fair | Fair | Good | Poor | Poor | Fair | Fair | Poor |
| SN*---------- Sharkey | Fair | Fair | Fair | Good | Good | Good | Good | Fair | Good | Good |
| SO*---------- Sharkey | Poor | Fair | Fair | Good | Fair | Fair | Fair | Poor | Fair | Fair |
| St---------- Sterlington | Good | Good | Good | Good | Good | Poor | Very poor. | Good | Good | Very poor. |

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

| Map symbol and soil name | Potential for habitat elements | | | | | | | Potential as habitat for- | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Grain and seed crops | Grasses and legumes | Wild herbaceous plants | Hardwood trees | Shrubs | Wetland plants | Shallow water areas | Openland wildlife | Woodland wildlife | Wetland wildlife |
| Tc---------- Tunica | Fair | Fair | Fair | Fair | Good | Good | Good | Fair | Fair | Good |
| Vc---------- Vacherie | Fair | Good | Good | Good | Good | Fair | Fair | Good | Good | Fair |

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

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe"]

| Map symbol and soil name | Shallow excavations | Dwellings without basements | Small commercial buildings | Local roads and streets | Lawns and landscaping |
|---|---|---|---|---|---|
| Bn, Br<br>Bruin | Slight | Slight | Slight | Slight | Slight. |
| Ce, Cm, Co<br>Commerce | Severe: wetness. | Moderate: wetness, shrink-swell. | Moderate: wetness, shrink-swell. | Severe: low strength. | Moderate: wetness. |
| Cp, CR*<br>Commerce | Severe: wetness. | Severe: flooding. | Severe: flooding. | Severe: low strength, flooding. | Moderate: wetness, flooding. |
| Ct<br>Convent | Severe: wetness. | Moderate: wetness. | Moderate: wetness. | Moderate: wetness. | Moderate: wetness. |
| CV*<br>Convent | Severe: wetness. | Severe: flooding. | Severe: flooding. | Severe: flooding. | Moderate: wetness, flooding. |
| De:*<br>Dundee | Severe: wetness. | Moderate: wetness, shrink-swell. | Moderate: wetness, shrink-swell. | Severe: low strength. | Moderate: wetness. |
| Alligator | Severe: wetness. | Severe: wetness, shrink-swell. | Severe: wetness, shrink-swell. | Severe: low strength, wetness. | Severe: wetness, too clayey. |
| Fa, FS*<br>Fausse | Severe: ponding. | Severe: flooding, ponding, shrink-swell. | Severe: flooding, ponding, shrink-swell. | Severe: low strength, ponding, flooding. | Severe: ponding, flooding, too clayey. |
| Mh<br>Mhoon | Severe: wetness. | Severe: wetness. | Severe: wetness. | Severe: low strength, wetness. | Severe: wetness. |
| Nd<br>Norwood | Slight | Slight | Slight | Severe: low strength. | Slight. |
| RE:*<br>Robinsonville | Moderate: wetness, flooding. | Severe: flooding. | Severe: flooding. | Severe: flooding. | Moderate: flooding. |
| Commerce | Severe: wetness. | Severe: flooding. | Severe: flooding. | Severe: low strength, flooding. | Moderate: wetness, flooding. |
| Se<br>Sharkey | Severe: wetness. | Severe: wetness, shrink-swell. | Severe: wetness, shrink-swell. | Severe: low strength, wetness. | Severe: wetness. |
| Sf<br>Sharkey | Severe: wetness. | Severe: wetness, shrink-swell. | Severe: wetness, shrink-swell. | Severe: low strength, wetness. | Severe: wetness, too clayey. |
| Sh<br>Sharkey | Severe: wetness. | Severe: flooding, wetness, shrink-swell. | Severe: flooding, wetness, shrink-swell. | Severe: low strength, wetness, flooding. | Severe: wetness, too clayey. |

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

| Map symbol and soil name | Shallow excavations | Dwellings without basements | Small commercial buildings | Local roads and streets | Lawns and landscaping |
|---|---|---|---|---|---|
| Sk---------- Sharkey | Severe: wetness. | Severe: flooding, wetness, shrink-swell. | Severe: flooding, wetness, shrink-swell. | Severe: low strength, wetness, flooding. | Severe: wetness, flooding, too clayey. |
| Sm:* | | | | | |
| Sharkey---------- | Severe: wetness. | Severe: wetness, shrink-swell. | Severe: wetness, shrink-swell. | Severe: low strength, wetness. | Severe: wetness, too clayey. |
| Tunica---------- | Severe: wetness. | Severe: shrink-swell. | Severe: shrink-swell. | Severe: low strength, shrink-swell. | Severe: too clayey. |
| SN*---------- Sharkey | Severe: wetness. | Severe: flooding, wetness, shrink-swell. | Severe: flooding, wetness, shrink-swell. | Severe: low strength, wetness, flooding. | Severe: wetness, too clayey. |
| SO*---------- Sharkey | Severe: wetness. | Severe: flooding, wetness, shrink-swell. | Severe: flooding, wetness, shrink-swell. | Severe: low strength, wetness, flooding. | Severe: wetness, flooding, too clayey. |
| St---------- Sterlington | Slight---------- | Slight---------- | Slight---------- | Slight---------- | Slight. |
| Tc---------- Tunica | Severe: wetness. | Severe: shrink-swell. | Severe: shrink-swell. | Severe: low strength, shrink-swell. | Severe: too clayey. |
| Vc---------- Vacherie | Severe: wetness. | Severe: wetness, shrink-swell. | Severe: wetness, shrink-swell. | Severe: low strength, shrink-swell. | Moderate: wetness. |

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

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms]

| Map symbol and soil name | Septic tank absorption fields | Sewage lagoon areas | Trench sanitary landfill | Area sanitary landfill | Daily cover for landfill |
|---|---|---|---|---|---|
| Bn, Br<br>Bruin | Moderate: percs slowly. | Slight | Slight | Slight | Fair: thin layer. |
| Ce, Cm, Co<br>Commerce | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Poor: thin layer. |
| Cp, CR*<br>Commerce | Severe: flooding, wetness, percs slowly. | Severe: flooding, wetness. | Severe: flooding, wetness. | Severe: flooding, wetness. | Poor: thin layer. |
| Ct<br>Convent | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Fair: wetness. |
| CV*<br>Convent | Severe: flooding, wetness, percs slowly. | Severe: flooding, wetness. | Severe: flooding, wetness. | Severe: flooding, wetness. | Fair: wetness. |
| De:*<br>Dundee | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Fair: wetness. |
| Alligator | Severe: wetness, percs slowly. | Slight | Severe: wetness, too clayey. | Severe: wetness. | Poor: too clayey, hard to pack, wetness. |
| Fa, FS*<br>Fausse | Severe: flooding, ponding, percs slowly. | Severe: flooding, ponding. | Severe: flooding, ponding, too clayey. | Severe: flooding, ponding. | Poor: too clayey, hard to pack, ponding. |
| Mh<br>Mhoon | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Poor: hard to pack, wetness. |
| Nd<br>Norwood | Moderate: percs slowly. | Moderate: seepage. | Moderate: too clayey. | Slight | Fair: too clayey. |
| RE:*<br>Robinsonville | Severe: flooding. | Severe: seepage, flooding. | Severe: flooding, seepage, wetness. | Severe: flooding, seepage. | Good. |
| Commerce | Severe: flooding, wetness, percs slowly. | Severe: flooding, wetness. | Severe: flooding, wetness. | Severe: flooding, wetness. | Poor: thin layer. |
| Se, Sf<br>Sharkey | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness, too clayey. | Severe: wetness. | Poor: too clayey, hard to pack, wetness. |
| Sh, Sk<br>Sharkey | Severe: flooding, wetness, percs slowly. | Severe: flooding, wetness. | Severe: flooding, wetness, too clayey. | Severe: flooding, wetness. | Poor: too clayey, hard to pack, wetness. |

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

| Map symbol and soil name | Septic tank absorption fields | Sewage lagoon areas | Trench sanitary landfill | Area sanitary landfill | Daily cover for landfill |
|---|---|---|---|---|---|
| Sm:* Sharkey | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness, too clayey. | Severe: wetness. | Poor: too clayey, hard to pack, wetness. |
| Tunica | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Fair: too clayey, wetness. |
| SN,* SO* Sharkey | Severe: flooding, wetness, percs slowly. | Severe: flooding, wetness. | Severe: flooding, wetness, too clayey. | Severe: flooding, wetness. | Poor: too clayey, hard to pack, wetness. |
| St Sterlington | Moderate: percs slowly. | Moderate: seepage. | Slight | Slight | Good. |
| Tc Tunica | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness. | Severe: wetness. | Fair: too clayey, wetness. |
| Vc Vacherie | Severe: wetness, percs slowly. | Severe: wetness. | Severe: wetness, too clayey. | Severe: wetness. | Poor: too clayey, hard to pack, wetness. |

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

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and "poor"]

| Map symbol and soil name | Roadfill | Topsoil | Map symbol and soil name | Roadfill | Topsoil |
|---|---|---|---|---|---|
| Bn, Br---- Bruin | Fair: thin layer. | Good. | Commerce---- | Poor: low strength. | Fair: thin layer. |
| Ce---- Commerce | Poor: low strength. | Fair: thin layer. | Se---- Sharkey | Poor: low strength, wetness, shrink-swell. | Poor: wetness. |
| Cm, Co, Cp---- Commerce | Poor: low strength. | Fair: too clayey, thin layer. | Sf, Sh, Sk---- Sharkey | Poor: low strength, wetness, shrink-swell. | Poor: too clayey, wetness. |
| CR*---- Commerce | Poor: low strength. | Fair: thin layer. | Sm:* Sharkey---- | Poor: low strength, wetness, shrink-swell. | Poor: too clayey, wetness. |
| Ct, CV*---- Convent | Fair: wetness. | Good. | Tunica---- | Fair: wetness. | Poor: too clayey. |
| De:* Dundee---- | Fair: wetness. | Good. | SN,* SO*---- Sharkey | Poor: low strength, wetness, shrink-swell. | Poor: too clayey, wetness. |
| Alligator---- | Poor: low strength, wetness, shrink-swell. | Poor: too clayey, wetness. | St---- Sterlington | Good---- | Good. |
| Fa, FS*---- Fausse | Poor: low strength, wetness, shrink-swell. | Poor: too clayey, wetness. | Tc---- Tunica | Fair: wetness. | Poor: too clayey. |
| Mh---- Mhoon | Poor: low strength, wetness. | Poor: wetness. | Vc---- Vacherie | Poor: low strength, shrink-swell. | Fair: thin layer. |
| Nd---- Norwood | Poor: low strength. | Good. | | | |
| RE:* Robinsonville---- | Good---- | Good. | | | |

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

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe"]

| Soil name and map symbol | Limitations for-- | | Features affecting-- | | |
|---|---|---|---|---|---|
| | Pond reservoir areas | Embankments, dikes, and levees | Drainage | Irrigation | Grassed waterways |
| Bn, Br<br>Bruin | Slight | Severe: piping. | Deep to water | Erodes easily | Erodes easily. |
| Ce<br>Commerce | Moderate: seepage. | Severe: thin layer, wetness. | Favorable | Wetness, erodes easily. | Erodes easily. |
| Cm, Co<br>Commerce | Moderate: seepage. | Severe: thin layer, wetness. | Favorable | Wetness | Erodes easily. |
| Cp<br>Commerce | Moderate: seepage. | Severe: thin layer, wetness. | Flooding | Wetness | Erodes easily. |
| CR*<br>Commerce | Moderate: seepage. | Severe: thin layer, wetness. | Flooding | Wetness, erodes easily. | Erodes easily. |
| Ct<br>Convent | Moderate: seepage. | Severe: piping, wetness. | Favorable | Wetness, percs slowly, erodes easily. | Erodes easily. |
| CV*<br>Convent | Moderate: seepage. | Severe: piping, wetness. | Flooding | Wetness, percs slowly, erodes easily. | Erodes easily. |
| De:* | | | | | |
| Dundee | Moderate: seepage. | Severe: piping, wetness. | Favorable | Wetness, rooting depth. | Erodes easily, rooting depth. |
| Alligator | Slight | Severe: hard to pack, wetness. | Percs slowly, wetness, slow intake. | Wetness, slow intake, percs slowly. | Wetness, erodes easily, percs slowly. |
| Fa, FS*<br>Fausse | Slight | Severe: hard to pack, ponding. | Ponding, percs slowly, flooding. | Ponding, slow intake, percs slowly. | Wetness, percs slowly. |
| Mh<br>Mhoon | Slight | Severe: wetness. | Percs slowly | Wetness, percs slowly, erodes easily. | Wetness, erodes easily, percs slowly. |
| Nd<br>Norwood | Moderate: seepage. | Severe: piping. | Not needed | Erodes easily | Erodes easily. |
| RE:* | | | | | |
| Robinsonville | Severe: seepage. | Severe: piping. | Deep to water | Flooding | Favorable. |
| Commerce | Moderate: seepage. | Severe: thin layer, wetness. | Flooding | Wetness, erodes easily. | Erodes easily. |
| Se<br>Sharkey | Slight | Severe: hard to pack, wetness. | Percs slowly | Wetness, percs slowly. | Wetness, erodes easily, percs slowly. |
| Sf<br>Sharkey | Slight | Severe: hard to pack, wetness. | Percs slowly | Wetness, slow intake, percs slowly. | Wetness, percs slowly. |

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

| Soil name and map symbol | Limitations for-- | | Features affecting-- | | |
|---|---|---|---|---|---|
| | Pond reservoir areas | Embankments, dikes, and levees | Drainage | Irrigation | Grassed waterways |
| Sh, Sk---------- Sharkey | Slight---------- | Severe: hard to pack, wetness. | Percs slowly, flooding. | Wetness, slow intake, percs slowly. | Wetness, percs slowly. |
| Sm:* Sharkey---------- | Slight---------- | Severe: hard to pack, wetness. | Percs slowly----- | Wetness, slow intake, percs slowly. | Wetness, percs slowly. |
| Tunica---------- | Moderate: seepage. | Severe: piping, wetness. | Percs slowly, slope. | Wetness, slow intake, percs slowly. | Percs slowly. |
| SN,* SO*---------- Sharkey | Slight---------- | Severe: hard to pack, wetness. | Percs slowly, flooding. | Wetness, slow intake, percs slowly. | Wetness, percs slowly. |
| St---------- Sterlington | Moderate: seepage. | Severe: piping. | Deep to water---- | Erodes easily---- | Erodes easily. |
| Tc---------- Tunica | Moderate: seepage. | Severe: piping, wetness. | Percs slowly----- | Wetness, slow intake, percs slowly. | Percs slowly. |
| Vc---------- Vacherie | Slight---------- | Severe: hard to pack, wetness. | Percs slowly----- | Wetness, percs slowly, erodes easily. | Wetness, erodes easily, percs slowly. |

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

TABLE 14.--ENGINEERING INDEX PROPERTIES

[Absence of an entry indicates that data were not estimated]

| Map symbol and soil name | Depth | USDA texture | Classification | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | 4 | 10 | 40 | 200 | | |
| | In | | | | | | | | Pct | |
| Bn---------- Bruin | 0-4 | Very fine sandy loam. | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 80-100 | <27 | NP-7 |
| | 4-70 | Silt loam, loam, very fine sandy loam. | ML, CL-ML, CL | A-4 | 100 | 100 | 95-100 | 80-100 | <32 | NP-10 |
| Br---------- Bruin | 0-8 | Very fine sandy loam. | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 80-100 | <27 | NP-7 |
| | 8-42 | Silt loam, loam, very fine sandy loam. | ML, CL-ML, CL | A-4 | 100 | 100 | 95-100 | 80-100 | <32 | NP-10 |
| | 42-60 | Variable--------- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ce---------- Commerce | 0-4 | Silt loam-------- | CL-ML, CL, ML | A-4 | 100 | 100 | 100 | 75-100 | <30 | NP-10 |
| | 4-71 | Silty clay loam, silt loam, loam. | CL | A-6, A-7-6 | 100 | 100 | 100 | 85-100 | 32-45 | 11-23 |
| Cm---------- Commerce | 0-10 | Silty clay loam | CL | A-6, A-7-6 | 100 | 100 | 100 | 90-100 | 32-50 | 11-25 |
| | 10-60 | Silty clay loam, silt loam, loam. | CL | A-6, A-7-6 | 100 | 100 | 100 | 85-100 | 32-45 | 11-23 |
| Co, Cp---------- Commerce | 0-5 | Silty clay loam | CL | A-6, A-7-6 | 100 | 100 | 100 | 90-100 | 32-50 | 11-25 |
| | 5-60 | Silty clay loam, silt loam, loam. | CL | A-6, A-7-6 | 100 | 100 | 100 | 85-100 | 32-45 | 11-23 |
| CR*---------- Commerce | 0-7 | Silt loam-------- | CL-ML, CL, ML | A-4 | 100 | 100 | 100 | 75-100 | <30 | NP-10 |
| | 7-60 | Silty clay loam, silt loam, loam. | CL | A-6, A-7-6 | 100 | 100 | 100 | 85-100 | 32-45 | 11-23 |
| Ct---------- Convent | 0-8 | Silt loam-------- | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 85-100 | <27 | NP-7 |
| | 8-43 | Silt loam, very fine sandy loam. | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 75-100 | <27 | NP-7 |
| | 43-60 | Variable--------- | --- | --- | --- | --- | --- | --- | --- | --- |
| CV*---------- Convent | 0-8 | Silt loam-------- | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 85-100 | <27 | NP-7 |
| | 8-60 | Silt loam, very fine sandy loam. | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 75-100 | <27 | NP-7 |
| De:* | | | | | | | | | | |
| Dundee---------- | 0-4 | Silty clay loam | CL, CL-ML, ML | A-4, A-6 | 100 | 100 | 90-100 | 75-98 | 20-35 | 3-11 |
| | 4-38 | Loam, silty clay loam, clay loam. | CL | A-6, A-7-6 | 100 | 100 | 90-100 | 70-95 | 28-44 | 12-22 |
| | 38-60 | Loam, very fine sandy loam, silt loam. | CL, CL-ML, ML | A-4 | 100 | 100 | 85-100 | 60-90 | <30 | NP-8 |
| Alligator------- | 0-8 | Clay------------- | CH | A-7-6, A-7-5 | 100 | 100 | 95-100 | 90-100 | 52-75 | 30-45 |
| | 8-53 | Silty clay, clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 62-94 | 33-64 |
| | 53-73 | Silty clay loam, silty clay, clay. | CH | A-7-6 A-7-5 | 100 | 100 | 100 | 95-100 | 62-94 | 33-64 |
| Fa---------- Fausse | 0-10 | Clay------------- | CH, OH, MH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 50-100 | 21-71 |
| | 10-35 | Clay------------- | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 60-100 | 31-71 |
| | 35-60 | Clay, silty clay, silty clay loam. | CH, MH, CL, ML | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 45-100 | 16-71 |

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | 4 | 10 | 40 | 200 | | |
| | In | | | | | | | | Pct | |
| FS*<br>Fausse | 0-3 | Clay | CH, OH, MH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 50-100 | 21-71 |
| | 3-30 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 60-100 | 31-71 |
| | 30-60 | Clay, silty clay, silty clay loam. | CH, MH, CL, ML | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 45-100 | 16-71 |
| Mh<br>Mhoon | 0-6 | Silty clay loam | CL | A-6, A-7-6 | 100 | 100 | 100 | 95-100 | 28-50 | 11-25 |
| | 6-60 | Silty clay loam, silt loam, clay loam. | CL, CH | A-6, A-7-6 | 100 | 100 | 100 | 95-100 | 30-55 | 11-28 |
| Nd<br>Norwood | 0-11 | Silt loam | CL, CL-ML | A-4, A-6 | 100 | 100 | 95-100 | 51-90 | 20-35 | 4-15 |
| | 11-33 | Silt loam, silty clay loam, loam. | CL | A-6, A-7-6, A-4 | 100 | 100 | 90-100 | 60-98 | 25-46 | 7-26 |
| | 33-60 | Silt loam, very fine sandy loam, silty clay loam. | CL, ML, CL-ML | A-4, A-6, A-7-6 | 100 | 100 | 90-100 | 70-98 | 20-45 | 2-25 |
| RE:*<br>Robinsonville | 0-6 | Silt loam | SM, ML | A-4 | 100 | 95-100 | 85-95 | 35-80 | <25 | NP-3 |
| | 6-60 | Stratified fine sandy loam to silt loam. | SM, ML | A-4 | 100 | 95-100 | 75-95 | 35-65 | <25 | NP-3 |
| Commerce | 0-7 | Silt loam | CL-ML, CL, ML | A-4 | 100 | 100 | 100 | 75-100 | <30 | NP-10 |
| | 7-26 | Silty clay loam, silt loam, loam. | CL | A-6, A-7-6 | 100 | 100 | 100 | 85-100 | 32-45 | 11-23 |
| | 26-60 | Stratified very fine sandy loam to silty clay. | CL-ML, CL, ML | A-4, A-6, A-7-6 | 100 | 100 | 100 | 75-100 | 23-45 | 3-23 |
| Se<br>Sharkey | 0-6 | Silty clay loam | CL | A-6, A-7-6 | 100 | 100 | 100 | 95-100 | 32-50 | 11-25 |
| | 6-42 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 42-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| Sf<br>Sharkey | 0-11 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| | 11-30 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 30-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| Sh<br>Sharkey | 0-6 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| | 6-28 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 28-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| Sk<br>Sharkey | 0-6 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| | 6-42 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 42-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | 4 | 10 | 40 | 200 | | |
| | In | | | | | | | | Pct | |
| Sm:* | | | | | | | | | | |
| Sharkey | 0-6 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| | 6-43 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 43-71 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| Tunica | 0-4 | Clay | CH | A-7-6, A-7-5 | 100 | 98-100 | 95-100 | 90-100 | 50-92 | 25-62 |
| | 4-30 | Clay, silty clay | CH | A-7-6 A-7-5 | 100 | 98-100 | 95-100 | 90-100 | 50-92 | 25-62 |
| | 30-65 | Fine sandy loam, loam, silt loam. | ML, CL-ML, CL | A-4, A-6 | 100 | 95-100 | 65-100 | 51-100 | <40 | NP-20 |
| SN* | 0-4 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| Sharkey | 4-30 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 30-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| SO* | 0-9 | Clay | CH, CL | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 46-85 | 22-50 |
| Sharkey | 9-42 | Clay | CH | A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 56-85 | 30-50 |
| | 42-60 | Clay, silty clay loam, silt loam. | CL, CH | A-6, A-7-6, A-7-5 | 100 | 100 | 100 | 95-100 | 32-85 | 11-50 |
| St | 0-18 | Silt loam | ML | A-4 | 100 | 100 | 90-100 | 60-95 | <23 | NP-3 |
| Sterlington | 18-46 | Silt loam, very fine sandy loam, loam. | CL-ML, ML | A-4 | 100 | 100 | 90-100 | 80-95 | <28 | NP-7 |
| | 46-60 | Very fine sandy loam, silt loam, loam. | ML, CL-ML | A-4 | 100 | 100 | 90-100 | 80-95 | <28 | NP-7 |
| Tc | 0-4 | Clay | CH | A-7-6, A-7-5 | 100 | 98-100 | 95-100 | 90-100 | 50-92 | 25-62 |
| Tunica | 4-23 | Clay, silty clay | CH | A-7-6, A-7-5 | 100 | 98-100 | 95-100 | 90-100 | 50-92 | 25-62 |
| | 23-60 | Fine sandy loam, loam, silt loam. | ML, CL-ML, CL | A-4, A-6 | 100 | 95-100 | 65-100 | 51-100 | <40 | NP-20 |
| Vc | 0-25 | Silt loam | ML, CL-ML | A-4 | 100 | 100 | 95-100 | 65-100 | <27 | NP-7 |
| Vacherie | 25-60 | Clay, silty clay | CH | A-7-6 | 100 | 100 | 100 | 95-100 | 51-75 | 26-45 |

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

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

[Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

| Soil name and map symbol | Depth | Clay <2mm | Moist bulk density | Permeability | Available water capacity | Soil reaction | Shrink-swell potential | Erosion factors | | Organic matter |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | K | T | |
| | In | Pct | G/cm3 | In/hr | In/in | pH | | | | Pct |
| Bn | 0-4 | 10-18 | 1.30-1.65 | 0.6-2.0 | 0.21-0.23 | 5.6-7.8 | Low | 0.37 | 5 | 0.54 |
| Bruin | 4-70 | 10-18 | 1.30-1.70 | 0.6-2.0 | 0.18-0.23 | 6.1-8.4 | Low | 0.37 | | |
| Br | 0-8 | 10-18 | 1.30-1.65 | 0.6-2.0 | 0.21-0.23 | 5.6-7.8 | Low | 0.37 | 5 | .5-4 |
| Bruin | 8-42 | 10-18 | 1.30-1.70 | 0.6-2.0 | 0.18-0.23 | 6.1-8.4 | Low | 0.37 | | |
| | 42-60 | --- | --- | --- | --- | --- | --- | --- | | |
| Ce | 0-4 | 14-27 | 1.35-1.65 | 0.6-2.0 | 0.21-0.23 | 5.6-7.8 | Low | 0.37 | 5 | .5-2 |
| Commerce | 4-71 | 18-35 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 6.1-8.4 | Moderate | 0.32 | | |
| Cm | 0-10 | 27-39 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 5.6-7.8 | Moderate | 0.32 | 5 | .5-2 |
| Commerce | 10-60 | 18-35 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 6.1-8.4 | Moderate | 0.32 | | |
| Co, Cp | 0-5 | 27-39 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 5.6-7.8 | Moderate | 0.32 | 5 | .5-2 |
| Commerce | 5-60 | 18-35 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 6.1-8.4 | Moderate | 0.32 | | |
| CR* | 0-7 | 14-27 | 1.35-1.65 | 0.6-2.0 | 0.21-0.23 | 5.6-7.8 | Low | 0.37 | 5 | .5-2 |
| Commerce | 7-60 | 18-35 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 6.1-8.4 | Moderate | 0.32 | | |
| Ct | 0-8 | 0-18 | 1.30-1.65 | 0.6-2.0 | 0.18-0.23 | 5.6-8.4 | Low | 0.43 | 5 | .5-2 |
| Convent | 8-43 | 0-18 | 1.30-1.65 | 0.6-2.0 | 0.20-0.23 | 6.1-8.4 | Low | 0.37 | | |
| | 43-60 | --- | --- | --- | --- | --- | --- | --- | | |
| CV* | 0-8 | 0-18 | 1.30-1.65 | 0.6-2.0 | 0.18-0.23 | 5.6-8.4 | Low | 0.43 | 5 | .5-2 |
| Convent | 8-60 | 0-18 | 1.30-1.65 | 0.6-2.0 | 0.20-0.23 | 6.1-8.4 | Low | 0.37 | | |
| De:* | | | | | | | | | | |
| Dundee | 0-4 | 10-30 | 1.30-1.70 | 0.6-2.0 | 0.15-0.20 | 4.5-8.4 | Low | 0.37 | 5 | .5-1 |
| | 4-38 | 18-34 | 1.30-1.70 | 0.2-0.6 | 0.15-0.20 | 4.5-6.0 | Moderate | 0.32 | | |
| | 38-60 | 18-25 | 1.30-1.70 | 0.6-2.0 | 0.15-0.20 | 4.5-7.3 | Low | 0.32 | | |
| Alligator | 0-8 | 30-60 | 1.20-1.50 | 0.2-0.6 | 0.18-0.22 | 4.5-5.5 | High | 0.28 | 5 | 1-3 |
| | 8-53 | 60-85 | 1.20-1.55 | <0.06 | 0.14-0.18 | 4.5-5.5 | Very high | 0.24 | | |
| | 53-73 | 35-85 | 1.20-1.55 | <0.06 | 0.14-0.18 | 6.1-7.3 | Very high | 0.24 | | |
| Fa | 0-10 | 40-95 | 0.8-1.45 | <0.06 | 0.18-0.20 | 5.6-7.3 | Very high | 0.20 | 5 | 2-15 |
| Fausse | 10-35 | 60-95 | 1.10-1.45 | <0.06 | 0.18-0.20 | 6.1-8.4 | Very high | 0.24 | | |
| | 35-60 | 35-95 | 1.10-1.45 | <0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.24 | | |
| FS* | 0-3 | 40-95 | 0.8-1.45 | <0.06 | 0.18-0.20 | 5.6-7.3 | Very high | 0.20 | 5 | 2-15 |
| Fausse | 3-30 | 60-95 | 1.10-1.45 | <0.06 | 0.18-0.20 | 6.1-8.4 | Very high | 0.24 | | |
| | 30-60 | 35-95 | 1.10-1.45 | <0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.24 | | |
| Mh | 0-6 | 27-39 | 1.35-1.70 | 0.2-0.6 | 0.18-0.22 | 6.1-7.8 | Moderate | 0.37 | 5 | .5-2 |
| Mhoon | 6-60 | 18-35 | 1.35-1.75 | 0.06-0.2 | 0.18-0.22 | 6.1-8.4 | Moderate | 0.37 | | |
| Nd | 0-11 | 10-27 | 1.35-1.65 | 0.6-2.0 | 0.17-0.21 | 7.4-8.4 | Low | 0.43 | 5 | .5-2 |
| Norwood | 11-33 | 18-35 | 1.35-1.70 | 0.6-2.0 | 0.15-0.22 | 7.9-8.4 | Low | 0.43 | | |
| | 33-60 | 10-35 | 1.35-1.70 | 0.6-2.0 | 0.15-0.22 | 7.9-8.4 | Low | 0.43 | | |
| RE:* | | | | | | | | | | |
| Robinsonville | 0-6 | 2-10 | 1.40-1.50 | 2.0-6.0 | 0.15-0.22 | 6.1-8.4 | Low | 0.32 | 5 | .5-2 |
| | 6-60 | 5-15 | 1.50-1.60 | 0.6-6.0 | 0.14-0.18 | 6.1-8.4 | Low | 0.32 | | |
| Commerce | 0-7 | 14-27 | 1.35-1.65 | 0.6-2.0 | 0.21-0.23 | 5.6-7.8 | Low | 0.37 | 5 | .5-2 |
| | 7-26 | 18-35 | 1.35-1.70 | 0.2-0.6 | 0.20-0.22 | 6.1-8.4 | Moderate | 0.32 | | |
| | 26-60 | 14-60 | 1.35-1.75 | 0.2-2.0 | 0.20-0.23 | 6.6-8.4 | Moderate | 0.37 | | |
| Se | 0-6 | 27-35 | 1.40-1.75 | 0.2-0.6 | 0.20-0.22 | 5.1-8.4 | Moderate | 0.37 | 5 | .5-2 |
| Sharkey | 6-42 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 42-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |

See footnote at end of table.

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

| Soil name and map symbol | Depth | Clay <2mm | Moist bulk density | Permeability | Available water capacity | Soil reaction | Shrink-swell potential | Erosion factors | | Organic matter |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | K | T | |
| | In | Pct | G/cm$^3$ | In/hr | In/in | pH | | | | Pct |
| Sf | 0-11 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| Sharkey | 11-30 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 30-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| Sh | 0-6 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| Sharkey | 6-28 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 28-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| Sk | 0-6 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| Sharkey | 6-42 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 42-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| Sm:* | | | | | | | | | | |
| Sharkey | 0-6 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| | 6-43 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 43-71 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| Tunica | 0-4 | 35-75 | 1.45-1.55 | <0.06 | 0.15-0.20 | 5.6-7.8 | High | 0.32 | 5 | .5-2 |
| | 4-30 | 35-75 | 1.45-1.55 | <0.06 | 0.15-0.20 | 5.6-7.8 | High | 0.32 | | |
| | 30-65 | 10-32 | 1.40-1.70 | 0.06-2.0 | 0.10-0.22 | 5.6-8.4 | Low | 0.32 | | |
| SN* | 0-4 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| Sharkey | 4-30 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 30-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| SO* | 0-9 | 40-60 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.1-8.4 | Very high | 0.24 | 5 | .5-2 |
| Sharkey | 9-42 | 60-90 | 1.20-1.50 | <0.06 | 0.18-0.20 | 5.6-8.4 | Very high | 0.28 | | |
| | 42-60 | 25-90 | 1.20-1.75 | 0.06-0.2 | 0.18-0.22 | 6.6-8.4 | Very high | 0.28 | | |
| St | 0-18 | 10-18 | 1.30-1.65 | 0.6-2.0 | 0.18-0.22 | 4.5-6.0 | Low | 0.43 | 5 | .5-4 |
| Sterlington | 18-46 | 10-18 | 1.30-1.70 | 0.6-2.0 | 0.18-0.22 | 5.1-6.5 | Low | 0.37 | | |
| | 46-60 | 10-22 | 1.30-1.70 | 0.6-2.0 | 0.18-0.22 | 5.1-8.4 | Low | 0.37 | | |
| Tc | 0-4 | 35-75 | 1.45-1.55 | <0.06 | 0.15-0.20 | 5.6-7.8 | High | 0.32 | 5 | .5-2 |
| Tunica | 4-23 | 35-75 | 1.45-1.55 | <0.06 | 0.15-0.20 | 5.6-7.8 | High | 0.32 | | |
| | 23-60 | 10-32 | 1.40-1.70 | 0.06-2.0 | 0.10-0.22 | 5.6-8.4 | Low | 0.32 | | |
| Vc | 0-25 | 10-18 | 1.35-1.70 | 0.6-2.0 | 0.20-0.23 | 5.6-8.4 | Low | 0.49 | 5 | .5-2 |
| Vacherie | 25-60 | 40-65 | 1.10-1.45 | <0.06 | 0.18-0.20 | 6.6-8.4 | Very high | 0.32 | | |

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

TABLE 16.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," and "apparent" are explained in the text. Absence of an entry indicates that the feature is not a concern]

| Soil name and map symbol | Hydrologic group | Flooding | | | High water table | | | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | | Frequency | Duration | Months | Depth | Kind | Months | Uncoated steel | Concrete |
| | | | | | Ft | | | | |
| Bn, Br---------- Bruin | B | None-------- | --- | --- | >6.0 | --- | --- | High----- | Low. |
| Ce, Cm, Co--------- Commerce | C | None-------- | --- | --- | 1.5-4.0 | Apparent | Dec-Apr | High----- | Low. |
| Cp, CR*---------- Commerce | C | Occasional | Brief to long. | Dec-Jun | 1.5-4.0 | Apparent | Dec-Apr | High----- | Low. |
| Ct---------- Convent | C | None-------- | --- | --- | 1.5-4.0 | Apparent | Dec-Apr | High----- | Low. |
| CV*---------- Convent | C | Occasional | Brief to long. | Dec-Jul | 1.5-4.0 | Apparent | Dec-Apr | High----- | Low. |
| De:* | | | | | | | | | |
| Dundee---------- | C | None-------- | --- | --- | 1.5-3.5 | Apparent | Jan-Apr | High----- | Moderate. |
| Alligator-------- | D | None-------- | --- | --- | 0.5-2.0 | Apparent | Jan-Apr | High----- | Moderate. |
| Fa, FS* **-------- Fausse | D | Frequent---- | Brief to long. | Jan-Dec | +1.-1.5 | Apparent | Jan-Dec | High----- | Low. |
| Mh---------- Mhoon | D | None-------- | --- | --- | 0-3.0 | Apparent | Dec-Apr | High----- | Low. |
| Nd---------- Norwood | B | None-------- | --- | --- | >6.0 | --- | --- | High----- | Low. |
| RE:* | | | | | | | | | |
| Robinsonville---- | B | Occasional | Brief to long. | Jan-Apr | 4.0-6.0 | Apparent | Jan-Apr | Low------ | Low. |
| Commerce--------- | C | Occasional | Brief to long. | Dec-Jun | 1.5-4.0 | Apparent | Dec-Apr | High----- | Low. |
| Se, Sf---------- Sharkey | D | None-------- | --- | --- | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |
| Sh---------- Sharkey | D | Occasional | Brief to very long. | Dec-Jun | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |
| Sk---------- Sharkey | D | Frequent---- | Brief to very long. | Dec-Jun | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |
| Sm:* | | | | | | | | | |
| Sharkey---------- | D | None-------- | --- | --- | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |
| Tunica---------- | D | None-------- | --- | --- | 1.5-3.0 | Apparent | Jan-Apr | High----- | Low. |
| SN*---------- Sharkey | D | Occasional | Brief to very long. | Dec-Jun | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |
| SO*---------- Sharkey | D | Frequent---- | Brief to very long. | Dec-Jun | 0-2.0 | Apparent | Dec-Apr | High----- | Low. |

See footnotes at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

| Soil name and map symbol | Hydrologic group | Flooding | | | High water table | | | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | | Frequency | Duration | Months | Depth | Kind | Months | Uncoated steel | Concrete |
| | | | | | Ft | | | | |
| St----------<br>Sterlington | B | None--------- | --- | --- | >6.0 | --- | --- | Low------- | Moderate. |
| Tc----------<br>Tunica | D | None--------- | --- | --- | 1.5-3.0 | Apparent | Jan-Apr | High------ | Low. |
| Vc----------<br>Vacherie | C | None--------- | --- | --- | 1.0-3.0 | Apparent | Dec-Apr | High------ | Low. |

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

** In the "High water table-Depth" column, a plus sign indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

TABLE 17.--CLASSIFICATION OF THE SOILS

| Soil name | Family or higher taxonomic class |
|---|---|
| Alligator | Very-fine, montmorillonitic, acid, thermic Vertic Haplaquepts |
| Bruin | Coarse-silty, mixed, thermic Fluvaquentic Eutrochrepts |
| *Commerce | Fine-silty, mixed, nonacid, thermic Aeric Fluvaquents |
| Convent | Coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents |
| Dundee | Fine-silty, mixed, thermic Aeric Ochraqualfs |
| Fausse | Very-fine, montmorillonitic, nonacid, thermic Typic Fluvaquents |
| Mhoon | Fine-silty, mixed, nonacid, thermic Typic Fluvaquents |
| Norwood | Fine-silty, mixed (calcareous), thermic Typic Udifluvents |
| Robinsonville | Coarse-loamy, mixed, nonacid, thermic Typic Udifluvents |
| Sharkey | Very-fine, montmorillonitic, nonacid, thermic Vertic Haplaquepts |
| Sterlington | Coarse-silty, mixed, thermic Typic Hapludalfs |
| Tunica | Clayey over loamy, montmorillonitic, nonacid, thermic Vertic Haplaquepts |
| Vacherie | Coarse-silty over clayey, mixed, nonacid, thermic Aeric Fluvaquents |

* This soil is a taxadjunct to the series.

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