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MAFES
MISSISSIPPI AGRICULTURAL &
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Soil Resource Areas Of Mississippi

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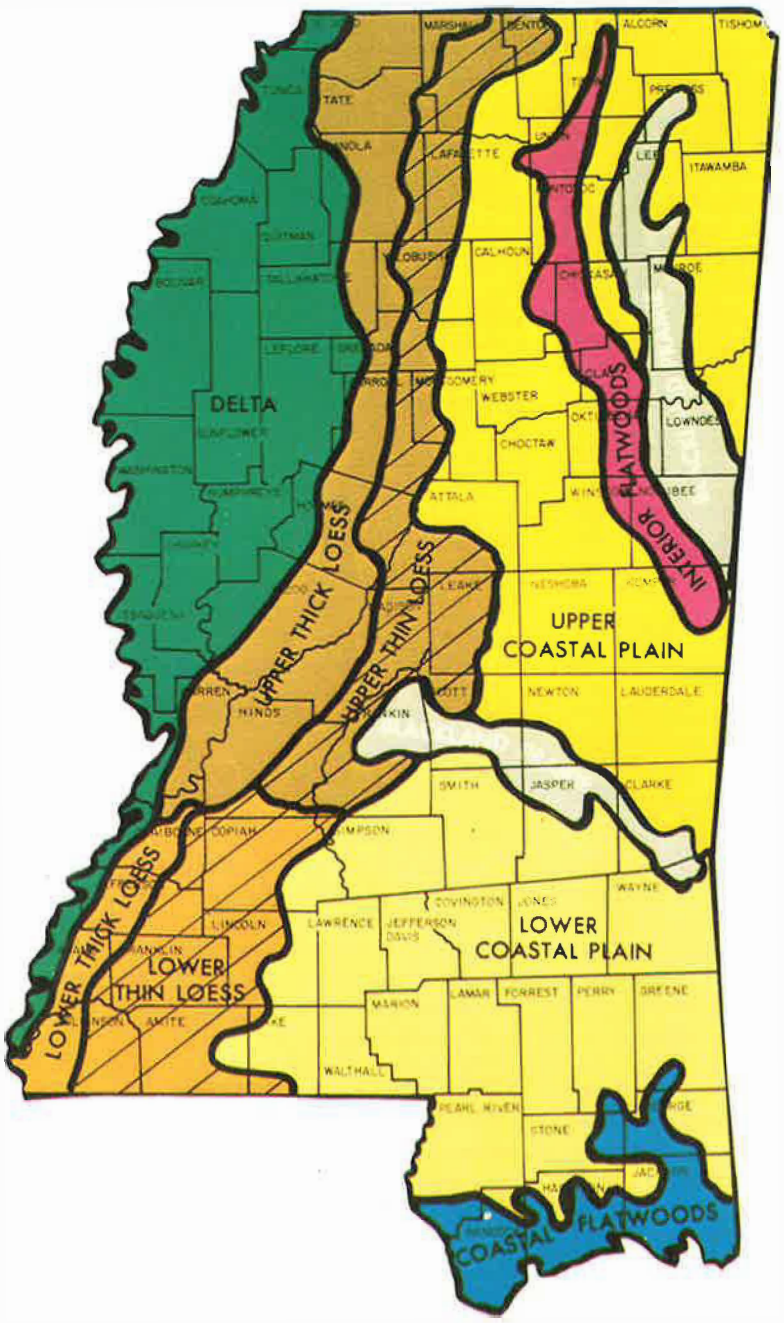
Mississippi may be divided into ten major soil resource areas, each containing soils, topography, and climatic factors that make it distinct from the other land areas. The map illustrating the major soil areas reflects generalized groups of soils, as well as topographic and geological conditions. The Soil Conservation Service-USDA in cooperation with the Mississippi Agricultural and Forestry Experiment Station has delineated the major land areas in the state as part of a national inventory of major land resource areas in the United States. A uniform system of names and land classes permits the divisions on the Mississippi map to join similar divisions in adjacent states.



DELTA (Southern Mississippi Valley Alluvium)

Bounded on the west by the Mississippi River, the Delta area extends the length of the state. It ranges in width from about 75 miles near the center to only a few miles in the southwestern corner of the state. The area is nearly level, which is typical of large flood plains. Elevations range from about 50 to 200 feet. Old natural levees, abandoned stream meanders and ox-bow lakes are common.

The fertile Delta soils developed in rich alluvium of

the Mississippi River and its tributaries. The level topography is conducive to large-scale mechanized agriculture. Many of the large flat areas are comprised of "slack-water" clayey soils, commonly called "buckshot."

The Delta of Mississippi is one of the largest contiguous agricultural areas in the United States and comprises over 5 million acres. The soils are very productive under proper management and are suited to a wide range of crops. The area generally has 220 to 260 frost-free days, with average annual precipitation ranging from about 45 inches in the north to 60 in the south. Soil temperatures have an average annual value greater than 59°F at 20 inches depth.

The major soils are Alligator, Sharkey, Commerce, Forestdale, Dubbs, **Robinsonville, Dundee, Tunica and Tutwiler.**

The major crops are soybeans, cotton, small grains, rice, pasture, vegetables and catfish.

BLACKLAND PRAIRIE (Mississippi Blackland Prairie)

There are two Blackland Prairie areas in the state. The major area extends from Booneville to Macon and is called the Northeast Prairie or Black Belt. The other area extends from Jackson southeastward to Wayne County and is known as the Central Prairie. The topography is nearly level with some strongly sloping areas. Elevations range from about 200 to 300 feet.

The soils developed in chalks, calcareous clays, acid clays and sediments overlying calcareous materials. They are typically high in calcium and contain relatively low magnesium levels. Most of the soils contain expansive montmorillonite clays that shrink and swell upon wetting and drying. They have high water holding capacities, but are very expansive and sticky and require special management practices.

The Blackland Prairie areas of the state comprise about two million acres. Large acreages have been shifted to soybean production in recent years. Sheet erosion is a problem on cultivated land. The soils are well suited to grasses and legumes. The area normally has 200 to 230 frost-free days and an average annual precipitation of about 50 to 55 inches. Soils have an average annual temperature greater than 59°F at 20 inches depth.

The major soils are Brooksville, Kipling, Vaiden, Okolona, Leeper, Catalpa, Houston, Sumter.

INTERIOR FLATWOODS (Southern Coastal Plain)

The Interior Flatwoods area comprises a narrow strip extending from Tippah County southeastward to Alabama. It lies between the Blackland Prairie on the east and the Upper Coastal Plain on the west. The topography is level to sloping. Large relatively flat areas are common. Sloping areas often occur near the contact with the Upper Coastal Plain Area.

The soils developed in silty and clayey materials of the Porters Creek geologic formation, commonly referred to as shale or "soapstone." The soils tend to be very acid and have a tendency to be wet. Drainage is needed for many of the soils. Annual average precipitation ranges from 50 to 60 inches. Annual average soil temperature is greater than 59°F at 20 inches depth. The frost-free period is about 200 to 230 days.

The soils generally are well suited for loblolly pine, and large acreages are used for timber production. The flood plain soils are used for row crop production, and much of the upland area is in timber. Recently, increased acreages have been devoted to soybeans. Other crops produced in the area are corn, cotton, hay, livestock, and specialized production of sweet potatoes in the Calhoun City and Houston vicinities.

The major soils are Adaton, Longview, Wilcox, Mayhew, Savannah, Arkabutla and Falkner.

UPPER THICK LOESS (Southern Mississippi Valley Silty Uplands)

This area is in the northwestern part of the state and is commonly called the Brown Loam area. It is bounded on the west by the Delta and on the east by the Upper Thin Loess Area. The topography ranges from level to steep. A steep escarpment commonly occurs at the contact with the Delta on the west, and this part of the area is referred to as the "bluff-hills." The frost-free period ranges from 200 to 235 days. Annual average precipitation is about 50 inches.

The soils developed in uniform, silty loess materials. These wind-blown materials are usually greater than four feet thick. The loess is considerably thicker along the western edge. The soils have a high silt content and are very erosive on sloping cultivated areas. Many soils commonly contain a fragipan or restrictive layer in the subsoil. Desirable physical properties and high natural fertility make the soils suitable for a wide range of crops where topography permits. About half of the area is in mixed hardwood and pine woodland. The major crops are cotton, soybeans, corn, and sorghum. The area is well-suited for livestock farming.

The major soils of this area are Memphis, Loring, Grenada, Calloway, Henry, Calhoun, Collins, Falaya, **Natchez, Adler and Morganfield.**

LOWER THICK LOESS (Southern Mississippi Valley Silty Uplands)

This area is in the southwestern part of the state bordering the Delta on the west and the Lower Thin Loess on the east. It is referred to as the Brown Loam area. The region normally has about 55 to 60 inches of rainfall and the frost-free period ranges from about 230 to 240 days. This section is very similar to the Upper Thick Loess Area, with the climate moderated by the influence of the Gulf of Mexico.

The soils developed in wind-blown loess usually greater than four feet deep. They are silty and susceptible to accelerated erosion on cultivated sloping land. Natural fertility of the soils is **high, but they require complete fertilizers for most crops. The steeper areas are adapted to pasture grasses and clovers. The gently sloping soils of the uplands and drained floodplains are suited for row crops. About 60 percent of the area is comprised of pine and mixed hardwood woodland.**

The major soils are Memphis, Loring, Adler, Collins, Calloway, Morganfield, Falaya, Grenada and Natchez.

UPPER THIN LOESS (Southern Mississippi Valley Silty Uplands)

This area includes the thin loess soils in the northern part of the state. The topography is nearly level to sloping. Soils developed in wind-blown loess generally four feet or less in thickness. The loess has been eroded in places exposing the underlying coastal plain materials. The nearly level and gently sloping soils are formed in the silty loess. The steeper soils have formed in the silty loess and loamy coastal plain materials. Some

of the soils have developed entirely in the underlying loamy materials where the loess has been completely removed by erosion. The loess gets progressively thinner on the eastern side of the area as it gradually merges with the loamy Upper Coastal Plain Area.

The frost-free period is about 200 to 235 days. Precipitation during the frost-free period is about 25 to 30 inches and averages about 50 inches annually. Soils of the flood plains and gently sloping upland areas are well suited for row crops, forage and pasture crops and livestock. About 50 percent of the area is in mixed pine and hardwood woodland. The primary crops are cotton, soybeans, corn and sorghum.

The major soils are Providence, Smithdale, Gillsburg, Ariel, Bude, Collins, **Falaya, Ora, Ruston and Sweatman.**

LOWER THIN LOESS (Southern Mississippi Valley Silty Uplands)

This resource area comprises the thin loess region below Raymond. It ranges from 30 to 40 miles wide and is about 70 to 80 miles long. Soils have developed in wind-blown, silty loess materials about four feet or less in thickness. The silty soils overlie loamy coastal plain materials. The area has a coastal influence from the Gulf of Mexico and receives about 55 inches of rainfall annually. The frost-free period ranges from about 230 to 240 days.

The soils are silty, susceptible to accelerated erosion on steep cultivated areas and need complete fertilization for production of the major crops of the area. Dairying and the production of soybeans, cotton, corn, small grains, pasture and hay are the most important agricultural activities. Vegetable crop production is extensive in the Crystal Springs area. Much of the open land is in bahiagrass pastures. Mixed hardwoods and pine comprise about 60 percent of the area.

The major soils are Providence, Smithdale, Gillsburg, Ariel, Bude, Collins, Falaya, Ora, Ruston and Sweatman.

UPPER COASTAL PLAIN (Southern Coastal Plain-Upper)

This resource area includes the greater part of Northeast and East Central Mississippi and comprises more than seven million acres. The soils **developed in loamy, clayey and sandy coastal plain sediments. Topography varies from level to steep, with elevations ranging from 50 to 600 feet. The frost-free period is about 200 to 240 days and precipitation ranges from about 50 to 56 inches.**

Soil fertility levels are generally low. Many of the soils are acid and require lime. All crops require complete fertilizers. Erosion is a problem on the sloping cultivated areas. Drainage of many of the bottom soils is needed for maximum utilization. Generally, the bottomlands are used for row crops and the steeper areas are used for pine timber production. About 50 percent of the area is in woodland. Major farm enterprises are soybeans, **cotton, corn, grain sorghum, beef cattle and dairying.**

The major soils are Smithdale, Ora, Savannah, Sweatman, Prentiss, Providence; Ruston on the uplands; Cahaba on terraces; and Jena and Mantachie on the bottomlands.

LOWER COASTAL PLAIN (Southern Coastal Plain-Lower)

This area includes much of the southern and southeastern part of the state and comprises about five million acres. Soils developed in mixed loamy, clayey and sandy coastal plain materials. Some of the soils are very sandy and contain considerable gravel. Topography ranges from nearly level to steep, with elevations of 50 to nearly 600 feet. The area has a higher annual rainfall than the Upper Coastal Plain, ranging from 55 to 60 inches. It has mild winters with a frost-free range of 240 to 270 days. The climate is conducive to a long **growing season, but considerable leaching of plant nutrients occurs.**

Inherent soil fertility is low and most soils are acid. Lime and complete fertilizers are needed for crop production. The area is commonly referred to as the "piney woods", or area of longleaf pines. The soils generally have desirable physical properties and respond to proper management. About 60 percent of the area is in pine and mixed hardwoods. Principal crops are soybeans, corn, cotton, small grain, sorghum and pasture. The southern part is suited for both winter and summer production of vegetables. The area has much potential for intensive livestock production with long-season grazing.

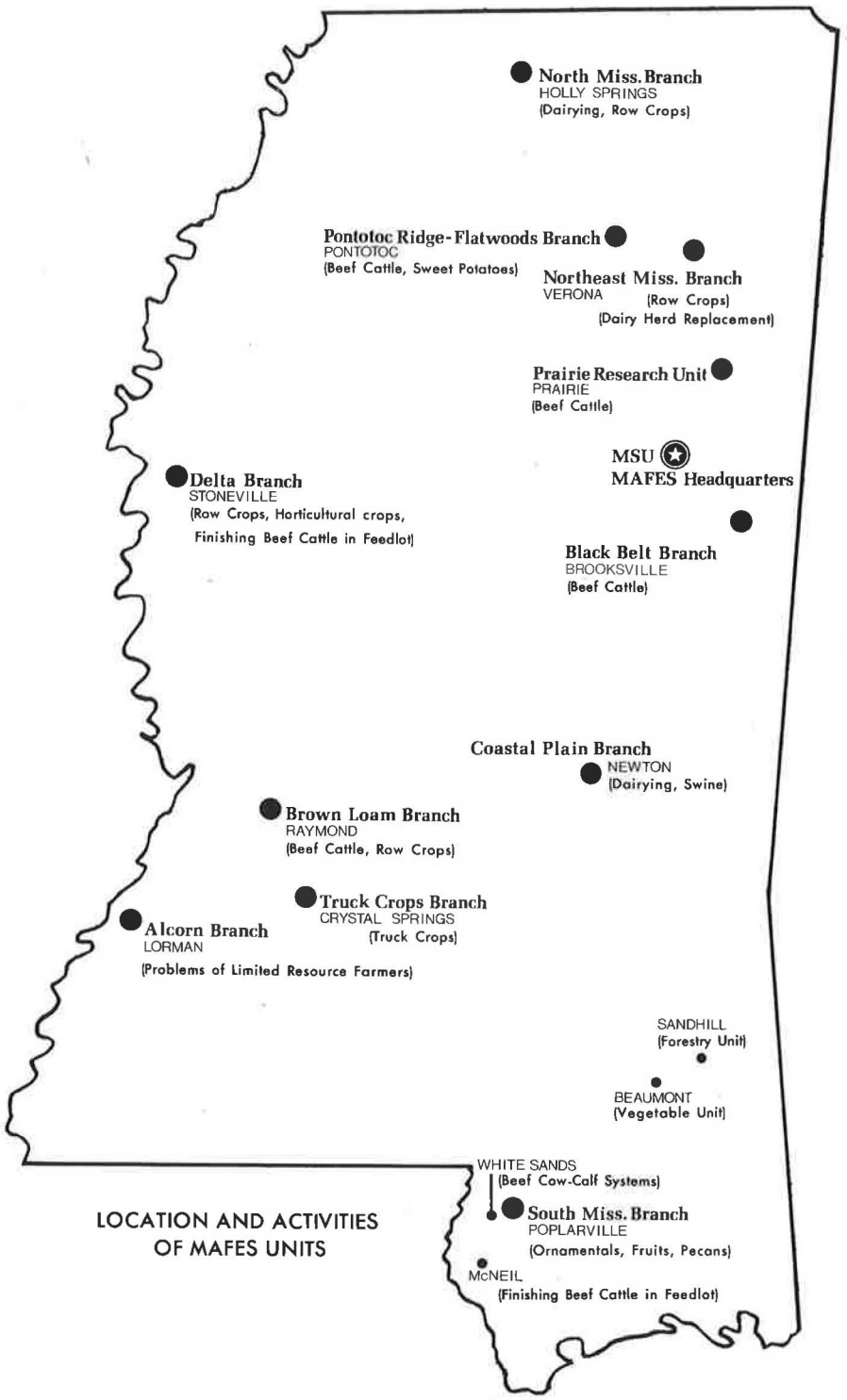
The major soils are Ruston, Smithdale, Savannah, Susquehanna, Benndale, Leaf, McLaurin, Ora, Lucy and Trebloc.

COASTAL FLATWOODS (Gulf Coast Flatwoods)

This area consists of flat to gently sloping land along the Gulf of Mexico. It includes the highly developed, populated coastal part of the state. Elevation ranges from sea level to 50 feet. The climate is humid and subtropical. The area has about 270 frost-free days and receives about 60 to 65 inches of annual precipitation.

About 80 percent of the area is in pine woodland or non-agricultural uses. Soils developed in loamy and sandy marine sediments and many are acid and low in natural fertility. Lime and fertilizers are needed for crop production. Soybean production has increased rapidly in the past few years. Other enterprises are **forage, pasture and feed crop production. The soils tend to be wet in rainy seasons, drouthy in early summer months.**

The main soils are Harleston, Atmore, Poarch, Alaga, Benndale, Eustis, Leaf, Eustis, Latonia, Plummer, Smithton and Saucier. Organic Handsboro soils comprise large portions of the tidal marshes.



LOCATION AND ACTIVITIES
OF MAFES UNITS

Lithograph
Central Duplicating
Mississippi State University