

Chapter 1

The Geography of Mississippi

Chapter Preview

PEOPLE

U. B. Phillips, Eugene Woldemar Hilgard, James K. Vardaman, Newton Knight, Ross R. Barnett

PLACES

Western Hemisphere; Lower South; Deep South; Jackson; Mound Landing; New Orleans, Louisiana; Free State of Jones; Mississippi Riviera

TERMS

absolute location, longitude, prime meridian, latitude, equator, elevation, eon, growing season, flora, fauna, tornado, hurricane, antebellum period, geologist, maize, sharecropper, farm tenancy, loess soil, alluvial soil, natural resource, tributary, drainage basin, groundwater, surface water, reservoir, aquaculture, lignite



The starting point in the study of any nation, state, or region is its geographical and natural environment. The United States is located in the Northern Temperate Zone, which is a vast belt of mild weather that encircles the globe between the North Pole and the equator. There is also a Southern Temperate Zone south of the equator.

Mississippi is located in the mildest region of the Northern Temperate Zone. Throughout our history, Mississippians have benefited from fair weather, fertile soil, and great natural resources. One of the myths associated with Mississippi is “the long hot summer” that we must endure year after year. Like some other myths about Mississippi, this one is not correct. As you will learn in this chapter, the average temperatures in our state are relatively mild.

There are occasions, however, when *inclement* (severe, stormy) weather disrupts our lives and causes extensive property damage and even death. In this chapter on the geography of Mississippi, we will examine those dangerous weather patterns.

You are about to enter upon a great journey back through the history of our state. Although there are some parts of our past that we may not be proud of, there is much to admire and to keep. A wise man once said, “Those who cannot remember the past are condemned to repeat it.” The future of your state will be determined by those of you who are taking this class in Mississippi history.



Left: Beautiful fall coloring drapes the trees in J. P. Coleman State Park, in the Tennessee-Tombigbee Hills region. **Above:** A Great Egret flaps across a cypress swamp in the Delta-Yazoo Basin region.

Signs of the Times

VITAL STATISTICS

TOTAL AREA:
48,434 square miles

LAND AREA:
46,914 square miles

WATER SURFACE:
1,520 square miles

COASTLINE:
44 miles

SHORELINE:
359 miles

EAST-WEST LENGTH:
180 miles

NORTH-SOUTH LENGTH:
350 miles

NUMBER OF SOIL REGIONS:
12

NUMBER OF COUNTIES:
82

HIGHEST POINT:
Woodall Mountain in
Tishomingo County, 806 feet

LOWEST POINT:
Gulf Coast, sea level

AVERAGE ELEVATION:
300 feet

LOCATION

LATITUDE:
Between 30°13' N and 35° N

LONGITUDE:
Between 88°07' W and 91°41' W

**LOCATION WITHIN
UNITED STATES:**
Southeast

BORDERING STATES:
Louisiana, Arkansas, Tennessee,
Alabama

**GEOGRAPHIC CENTER OF
THE STATE:**
In Leake County,
9 miles northwest of Carthage

Section 1

Where in the World Is Mississippi?

As you read, look for

- Mississippi's location in the world;
- the size and shape of our state;
- the growing and increasingly diverse population of Mississippi;
- terms: **absolute location, longitude, prime meridian, latitude, equator, elevation.**

Map 1 Mississippi in the United States

Map Skill: Rank the five states that border the Gulf of Mexico according to the length of their coastline.

Although Mississippi may seem quite large, it is only a small part of our global world. It is located in the Western Hemisphere, on the continent of North America, and is one of the fifty states that make up the United States



Map 2 The Deep South

Map Skill: Which states were part of the Cotton Kingdom?



Northern Hemisphere



Southern Hemisphere

Eastern Hemisphere



Western Hemisphere

Map 3 The Hemispheres

Map Skill: Through which continents does the prime meridian pass?

of America. The state of Mississippi is in the southern part of the United States, in what is sometimes called the Lower South or the Deep South. Jackson is the capital city of the state of Mississippi, which has eighty-two counties and many towns and cities.

Locating Mississippi

On a globe or a map, longitude and latitude coordinates indicate the **absolute location** (precise location on Earth's surface) of a particular place. **Longitude** is the distance east or west of the **prime meridian** (the imaginary line that runs from North Pole to South Pole through Greenwich, England). **Latitude** is the distance north or south of the **equator** (the imaginary line that goes around the globe halfway between the North and South Poles). Mississippi is located approximately between *latitudes* of 30 degrees 13 minutes north (30°13' N) and 35 degrees north (35° N) and *longitudes* of 88 degrees 7 minutes west (88°07' W) and 91 degrees 41 minutes west (91°41' W).

In an age of technology unimagined by your grandparents, your family car or truck may be equipped with a Global Positioning System (GPS). This new technology, with the aid of a network of GPS satellites, can determine the exact latitude, longitude, and **elevation** (height of the land above sea level) of any place on Earth. We use GPS technology primarily to help us find our way from town to town and get around in big cities. Its possibilities and future use are wide-ranging.

Something Extra!

At the time of the American Civil War, the Deep South was also called the Cotton Kingdom because its economy was based almost exclusively on cotton production and the plantation system.

Measuring Mississippi

Mississippi's total area consists of 48,434 square miles. The land area is 46,914 square miles and the water surface is 1,520 square miles. The state is about 350 miles long from north to south, and about 180 miles wide from east to west. It is 32nd in size among the 50 states. According to the 2010 census, Mississippi's population was 2,967,297, an increase of 122,639 from the 2000 census. The state's population includes 15,030 Native Americans, or 0.5 percent of its total population. Mississippi has the highest percentage of African Americans of any state. There are 1,098,385 African Americans in Mississippi, which is 37 percent of the state's population. The state's Asian American population is 25,742, an increase of 7,116 from 2000, and is 0.9 percent of the total. Hispanics and Latinos comprise 2.7 percent of the state's population and number 81,481, an increase of 41,912 since 2000. Mississippi's female population is 52 percent of the total, and the male population is 48 percent.

As we will learn during the study of our state, people from other states and other parts of the country are intrigued by Mississippi and are surprised to learn how many famous and prominent people there are from our state. So before we begin our journey through Mississippi's long and interesting history, we will first examine the geography and the natural resources of that special place we call Mississippi.



Map 4 Latitude and Longitude

Map Skill: Can you estimate the absolute location of the city of Jackson?

Reviewing the Section

1. Define in sentence form: absolute location, equator, elevation.
2. What technology can we use to determine latitude, longitude, and elevation?
3. How does Mississippi rank in size among the fifty states?

Section 2

Fair Weather

Map 5 Average Yearly Precipitation

Map Skill: Which city has a higher annual precipitation, Greenville or Biloxi?



As you read, look for

- how the weather has influenced Mississippi's development as an agricultural state;
- the types of natural disasters that have caused damage in our state;
- terms: **eon**, **growing season**, **flora**, **fauna**, **tornado**, **hurricane**.

History is the story of man, and geography is the stage on which that story is performed. Rivers and woodlands, mountains and deserts are the scenery that decorate the stage of history, and weather patterns, it may be said, are the sound effects of history.

In the early eons of time, man roamed through the forests and across the plains and meadows of the ancient world. An **eon** is a vast, long period of time. In those early times, man had no awareness or attachment to place and had little awareness of time. He measured his days and nights by the rhythm of the solar system. In the slow course of time, man eventually *domesticated* (adapted for human use) plants and animals and ceased his roaming. He settled in a place, gave that place a name, called it home, herded his livestock, farmed the land, and measured his days by the rhythm of the seasons.

The famous historian U. B. Phillips began his book *Life and Labor in the Old South* by saying, "Let us begin by discussing the weather, for that has been the chief agency in making the South distinctive." Professor Phillips did not intend to exclude all the other forces and circumstances that shape the course of history. He just wanted to emphasize how important the southern climate—with its mild temperatures, high rainfall, and fertile soil—was in shaping southern history, especially in the Deep South.

Rainfall and Temperature

From its beginning, Mississippi seemed destined to be an agricultural state. The growing season in Mississippi ranges from 210 days in the northern part of the state to as many as 270 days along the Gulf Coast. A **growing season** is the number of days between the last killing frost

in the spring and the first killing frost in the fall. An average rainfall of over 59 inches per year and mild temperatures produce nearly ideal conditions for farming.

The average annual temperature in Mississippi is approximately 62 degrees Fahrenheit (62°F). Only Florida (70°F), Louisiana (66°F), and Texas (64°F) have higher annual temperatures. The average July temperature is a surprisingly mild 81°F. Winters in Mississippi are also mild with an average January temperature of approximately 46°F.

These conditions produce a southern flora and fauna of incredible variety. **Flora** refers to the natural vegetation of a region, and **fauna** refers to the animal life of a particular area. Much of Mississippi's untamed wilderness was surrendered early on to the demands of its extensive agricultural system and later to the demands of its *burgeoning* (growing and expanding rapidly) urban development. But Mississippians love the outdoors and have preserved as much of its original habitat as possible.

Natural Disasters

Although Mississippi normally enjoys good weather, there are times when natural hazards such as droughts and floods, tornadoes, hurricanes, and thunderstorms cause widespread damage, destruction of property, and even death. Lightning is a serious danger during thunderstorms. According to *Storm Data*, a National Weather Service publication, over the last thirty years the United States has averaged fifty-eight reported lightning fatalities per year. Due to underreporting, the figures are more realistically at least seventy deaths per year.

Floods

Several geographic factors make Mississippi especially vulnerable to flooding. Mississippi's many rivers wind slowly in great loops and turns through soft soils. Springtime brings heavy rain and high water, and some rivers overflow their banks into adjacent floodplains and wetlands.

Before Hurricane Katrina, the worst and most costly natural disaster in Mississippi's history was the Great Flood of 1927. On April 21, 1927, at 7:45

Map 6 Average January Temperatures

Map Skill: What is the average January temperature in Tupelo?



Map 7 Average July Temperatures

Map Skill: Which section of the state has the highest July temperatures?





Catastrophic flooding of the Mississippi River (above) led the U.S. Congress to pass legislation authorizing the creation of the Waterways Experiment Station at Vicksburg (right) to design a flood control plan for the river.



a.m., the levee broke at Mound Landing, near Scott, which is about 15 miles north of Greenville. The Mississippi River rushed through the breach and eventually flooded almost 3 million acres of land in our state. More than 41,000 Mississippi homes were flooded, 21,000 buildings were destroyed, and an entire crop year was lost. In the 7 states affected by the flood, 246 people were killed.

As a direct result of the 1927 flood, the U.S. Congress passed legislation to prevent or reduce the possibility of similar disasters in the future. That legislation authorized the U.S. Army Corps of Engineers to establish the Waterways Experiment Station at Vicksburg to study the Mississippi River and design a flood control plan.

In April and May of 2011, record rainfall and snow melt in the Midwest caused severe flooding in several states bordering the Mississippi River. The 2011 spring floods set new records for high water at Vicksburg and Natchez and nearly matched the 1927 levels at Greenville and Memphis. Intentional flooding of some areas in South Louisiana by opening a spillway was necessary to save parts of Baton Rouge and New Orleans. Approximately 24,500 homes were evacuated in Louisiana and Mississippi. On May 5 and 7, the U.S. government declared thirteen Mississippi counties, eleven of which bordered the river, federal disaster areas. That classification made those counties eligible for federal relief funds.

Something Extra!

According to statistics from the National Oceanic and Atmospheric Administration (NOAA), Louisiana has the highest annual precipitation with over 60 inches. Nevada, with less than 10 inches, has the lowest.



Tornadoes

Mississippi is also subject to weather patterns that can produce **tornadoes** (dark, funnel-shaped clouds with swirling winds that can measure over two hundred miles an hour). Tornadoes normally develop in the spring and early summer when warm, moist air from the Gulf Coast collides with cooler air moving south from the interior parts of the country. In Mississippi, tornadoes usually move across the state from the southwest to the northeast at twenty to forty miles per hour. Since the 1950s, Mississippi has averaged twenty-four tornadoes and eight tornado-related deaths a year.

Something Extra!

Two of the four deadliest tornadoes ever recorded in the U.S. took place in Mississippi. The Great Natchez Tornado of May 1840 caused 317 deaths, and the Tupelo Tornado of April 1936 caused 216 deaths. One of the survivors of the Tupelo Tornado was a young Elvis Presley!

Figure 1 Enhanced Fujita Scale for Tornadoes

Category	Wind Speeds (mph)	Potential Damage
EF0	65–85	Minor damage
EF1	86–110	Moderate damage
EF2	111–135	Considerable damage
EF3	136–165	Severe damage
EF4	166–200	Devastating damage
EF5	Over 200	Incredible damage



Hurricane Katrina (above right) was probably the greatest natural disaster in American history. The Category 4 hurricane struck the coast of the Gulf of Mexico on August 29, 2005, causing almost \$100 billion in damage from western Louisiana all the way to the panhandle of Florida. The Mississippi coast took the brunt of the storm, and the accompanying flooding caused by the storm surge devastated cities like Biloxi (above left). More than 1,800 people died, mostly in Louisiana.

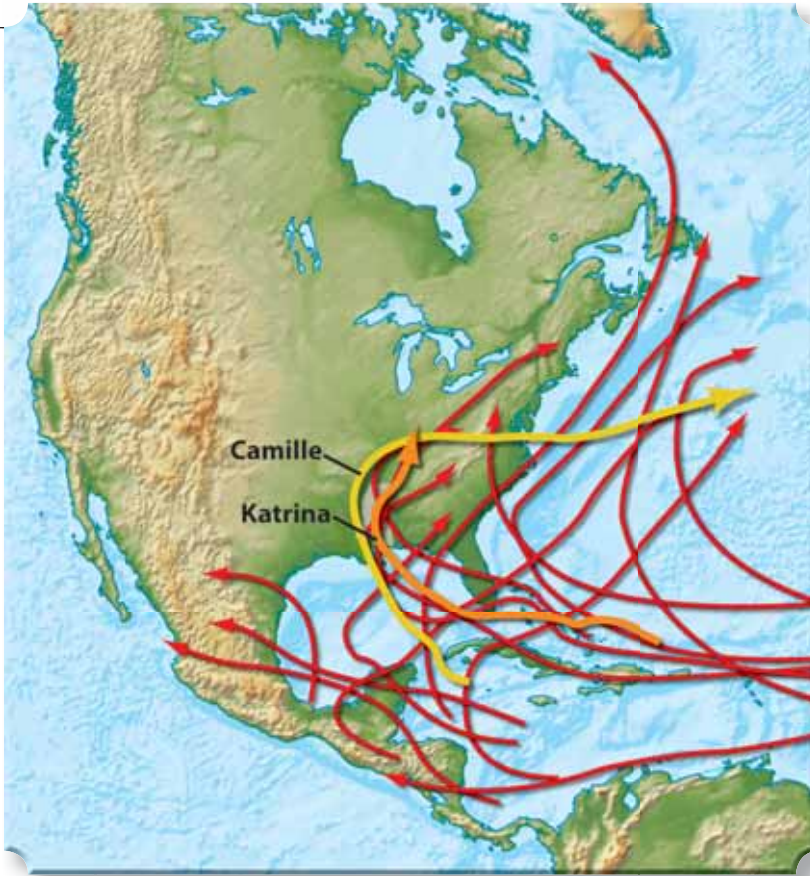
Hurricanes

Hurricanes are violent weather patterns that form in the Atlantic Ocean during the summer and fall. In fact, hurricane season in the Atlantic begins on June 1 and ends on November 30. A tropical storm is considered a hurricane when its winds reach 74 miles per hour. Hurricane winds normally extend over several hundred miles and move counterclockwise around a calm center called the “eye” of the storm. As a hurricane approaches coastal areas, its winds force high walls of water onto the land that can cause massive damage, sometimes even more damage than the wind that swept the floodwaters before it.

Two of the most destructive hurricanes in Mississippi history were Camille and Katrina. Hurricane Camille, with winds that reached 200 miles per hour, struck the Mississippi Gulf Coast on August 17, 1969. It caused

Figure 2 Saffir-Simpson Hurricane Scale

Category	1	2	3	4	5
Sustained Winds (mph)	74–95	96–110	111–130	131–155	Over 155
Storm Surge (in Feet)	4–4.9	5.0–7.9	8.0–11.9	12.0–18.0	Over 18.0
Expected Damage	Minimal	Moderate	Extensive	Extreme	Catastrophic



Map 8 Hurricane Paths

Map Skill: Which hurricane, Camille or Katrina, came closest to your home?

Something Extra!

Potential hurricanes are given names when they reach tropical storm force. There are six standard lists of names, which begin repeating in the seventh year. However, when a storm has a major economic impact, its name (Katrina, for example) is replaced on the list.

large-scale destruction of property, and more than 140 people died when Camille came ashore.

Hurricane Katrina, which slammed into the Gulf Coast on August 29, 2005, is considered the greatest natural disaster in American history. The number of deaths may have reached as high as 1,800, and property damage has been estimated at more than \$90 billion. More than 80 percent of the city of New Orleans, Louisiana, was flooded after its levee system broke. The Mississippi Gulf Coast suffered as much from the surging floodwaters as it did from the high winds. Katrina caused significant damage across the Gulf Coast from the Florida panhandle to western Louisiana. Typical of the American spirit that has made this nation one of the marvels of human history, the residents of the Gulf Coast are recovering and rebuilding as they have done so often in the past.

Reviewing the Section

1. Define in sentence form: eon, fauna, hurricane.
2. Why did Mississippi, from its beginning, seem destined to be an agricultural state?
3. Why is Mississippi especially vulnerable to flooding?

Section 3

Fertile Soil

Something Extra!

Before they were freed under President Abraham Lincoln's Emancipation Proclamation in 1863, African American slaves were considered the personal property, or chattel property, of their owners.

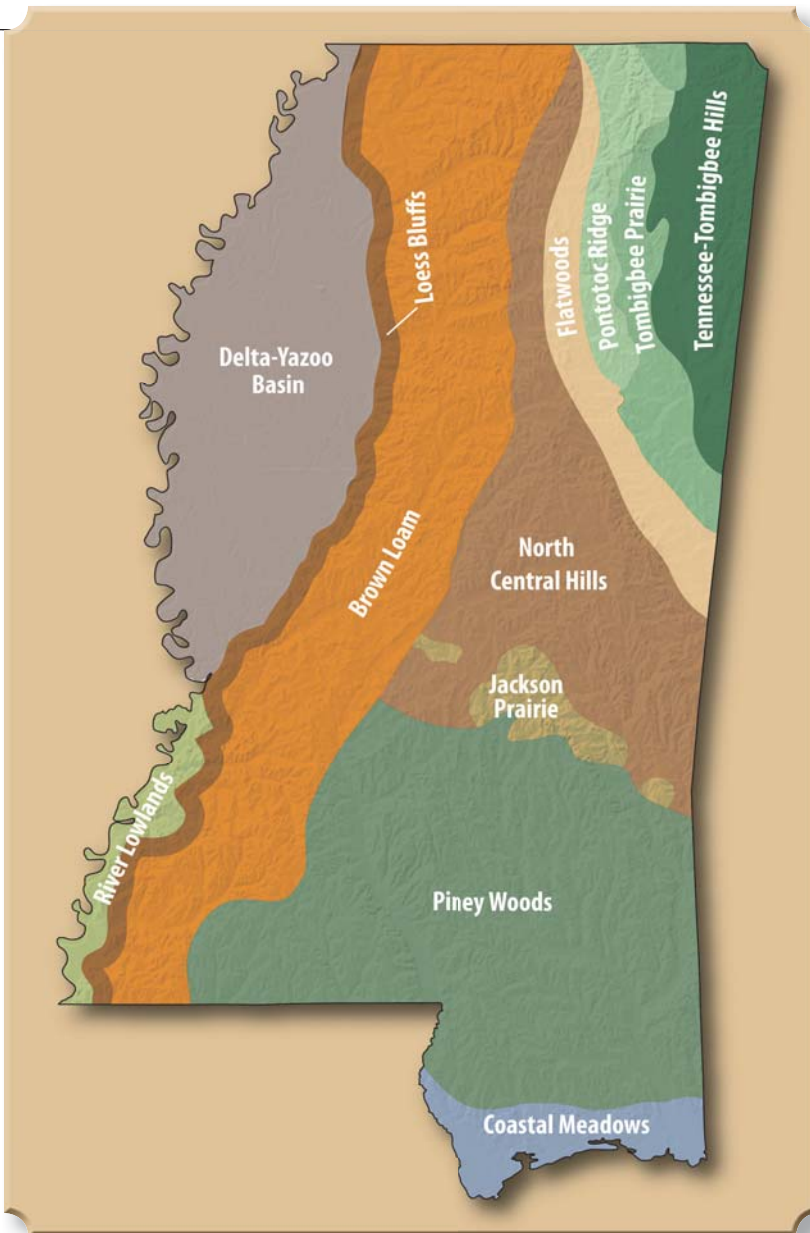
As you read, look for

- the physical features of Mississippi's twelve soil regions;
- the modern social and political characteristics of the twelve regions;
- terms: **antebellum period, geologist, maize, sharecropper, farm tenancy, loess soil, alluvial soil.**

In addition to a favorable climate, Mississippi has some of the richest and most fertile soil in America. During the 1830s, a great land rush brought thousands of settlers from the Atlantic states into Mississippi. Those settlers brought with them the customs and traditions of the colonial South, especially the traditions of land ownership and slavery.



Mississippi's rich soil was a magnet for settlers in the early 1800s. In the period leading up to the Civil War, cotton grown in this soil made Mississippi one of the wealthiest places in the United States.



Map 9 Mississippi's Soil Regions

Map Skill: Which soil regions border the Mississippi River?



During America's colonial period (the period from the founding of the English colony at Jamestown in 1607 to the Declaration of Independence in 1776), landowners in the southern colonies had higher social status and more political power than those who did not own land. In some colonies, only landowners could vote or hold public office. Throughout the antebellum period, these traditions were important in Mississippi. The **antebellum period** of Mississippi history is the time from its establishment as an American territory in 1798 to the beginning of the Civil War in 1861.

In the 1880 U.S. Census of Agriculture, Eugene Woldemar Hilgard, a former state geologist, produced a detailed map of Mississippi's varied agricultural regions. Hilgard divided the state into sixteen different soil regions. More recent **geologists** (scientists who study the origin, history, and composition of Earth's crust) have modified Hilgard's map by reducing the number of soil regions to ten or twelve. Some geologists refer to soil regions as

Something Extra!

The term *antebellum* comes from the Latin words *ante*, which means "before," and *bellum*, which means "war."

Something Extra!

Comparatively speaking, Mississippi's highest point is not very high, ranking 47th among the states. Alaska's Mt. McKinley (also called Denali) is the highest high point at 20,320 feet. Florida's Britton Hill is the lowest at 345 feet.

Below: J. P. Coleman State Park is located on Pickwick Lake, in the northeast corner of Mississippi, on the border with Alabama, in the Tennessee-Tombigbee Hills region. Often called the Northeast Hills, it is the most rugged part of the state, with an average elevation of 650 feet.

physiographic (landform) regions. For our study, Mississippi is divided into twelve soil regions. Because of the diversification of the state's economy and the decline in the prominence of agriculture during the twentieth century, these twelve regions will be identified by their geographic features and also by their modern social and political characteristics. Just as sectionalism has played a major role in American life and politics, the various sections and regions within our state have also influenced the course of history in Mississippi.



Tennessee-Tombigbee Hills Region

In the northeast corner of the state is a hill section known as the Tennessee-Tombigbee Hills. Some geologists identify this section as the Northeast Hills. The average elevation of these hills is about 650 feet above sea level. It's not surprising that the highest point in Mississippi, Woodall Mountain in Tishomingo County, is located in this region. It has an elevation of 806 feet.

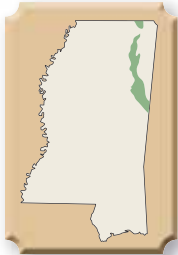
The soil in this region is sandy loam and reddish orange in color. During the antebellum period, farms in the Tennessee-Tombigbee Hills were located in the bottomlands along creeks and rivers. Few of these small farmers owned slaves, and they had more in common with the mountaineers in east Tennessee than they did with Mississippi's large planters. When Mississippi seceded from the Union in 1861, many people in this region opposed secession and some even joined the Union army.

After the Civil War, "Northeast Hills" was used to describe a political section of the state rather than a soil region. Northeast Hills referred to those



predominately white counties north and east of the Jackson Prairie. During the 1880s, the white small farmers in the hill counties became dissatisfied with the state's political leaders, who were mostly from the Delta and the counties along the Mississippi River that had large black majorities.

Eventually, the predominately white counties in the Piney Woods and coastal section joined with northeast Mississippi to take control of state government. This takeover is called the Revolt of the Rednecks and culminated with the election of James K. Vardaman as governor in 1903.



Tombigbee Prairie Region

To the east of the Tennessee-Tombigbee Hills is a strip of highly fertile soil extending from the Tennessee border southeastward into Alabama. It is usually identified as the Tombigbee Prairie. Some geographers also refer to this region as the Black Prairie. The Tombigbee Prairie is characterized by a gently rolling terrain averaging two hundred to three hundred feet above sea level with rich, dark soil.

In the antebellum period, there were many large plantations in the Black Prairie, and examples of Old South architecture appear throughout this region, especially in the towns of Columbus, Macon, Aberdeen, and Starkville. Old South architecture refers to large, two-story mansions with ornate white pillars. Prosperous planters in the Tombigbee Prairie had much in common with wealthy planters in the Delta and the counties along the Mississippi River south of Vicksburg. When political campaigns involved social and economic issues, the prairie counties almost always voted with the western part of the state.

Something Extra!

The term *redneck* referred to white farmers who usually owned only a few acres of land and did the plowing and other field work themselves. Exposure to the southern sun for long hours had given these white farmers deeply tanned, rust-colored necks.

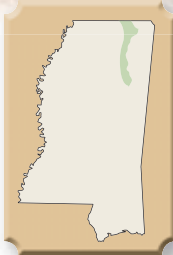
Below: The Tombigbee Prairie region, also known as the Black Prairie, is an area of rich, dark soil that was an important cotton-growing region during the antebellum era, with many plantations and a large number of slaves.





Something Extra!

Pontotoc is a Chickasaw word. Some say it means “land of hanging grapes”; others say it means “weed prairie.”



Pontotoc Ridge Region

Extending southward from the Tennessee border through Tippah, Union, Pontotoc, Chickasaw, Clay, and Oktibbeha Counties, and ending near Starkville, is a land formation called the Pontotoc Ridge. At its highest point, the ridge is approximately six hundred feet above sea level. Flanked on the east by the Tombigbee Prairie and on the west by the Flatwoods, the Pontotoc Ridge can be clearly seen during the fall of the year when foliage has disappeared. The red clay and sandy loam that form the soil along the ridge was fertile during the state’s early history. It was along the Pontotoc Ridge that the Chickasaw Indians grew their **maize**, which was the Indian name for corn. After the Chickasaw were removed to the Indian Territory out west in the 1830s, white farmers plowed the same furrows but planted mostly cotton where the Indians had planted corn.

After the Civil War, the Pontotoc Ridge lost much of its fertility, and most of the small farmers became sharecroppers. A **sharecropper** farmed another man’s land for a share of the crop.



Flatwoods Region

To the east of the Pontotoc Ridge is a long narrow strip of land that extends from the northwestern corner of Tippah County southeastward through Kemper County into Alabama. The gray soil of the Flatwoods is not fertile and it drains poorly; therefore, it is not conducive to cultivation. Although this area can sustain several varieties of upland hardwood, it is considered one of the least productive soil regions in the state. The social and economic conditions in the Flatwoods were similar to those in the Tennessee-Tombigbee Hills, and the residents of the Flatwoods were politically allied with the hill section.



North Central Hills Region

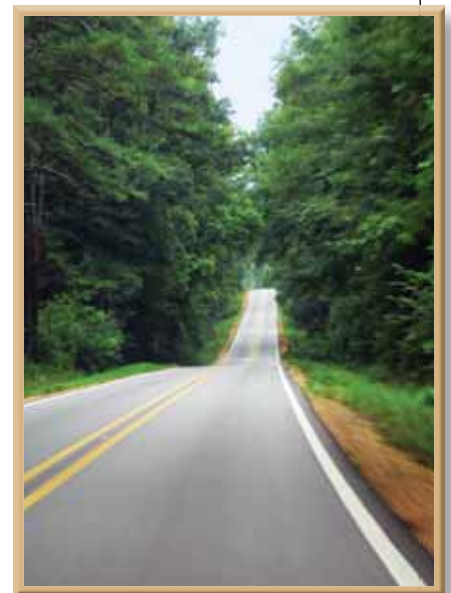
The North Central Hills are west of the Flatwoods and extend from the Tennessee border southwestward into Rankin County and east into Clarke County. The region includes a variety of soil types. Sands, clays, and loams, varying in color from dark red to light orange, are found throughout the North Central Hills. Some geologists identify this region as the Sand Clay Hills or the Red Clay Hills. This area is also known as the North Central Plateau because its elevation ranges from four hundred to six hundred feet. Through the years, rivers and streams have cut broad and deep gullies in the region because the sandy loam soil is especially susceptible to erosion. The prairie bottoms of silt and loam that are found throughout the region are highly fertile and have been the scene of productive farms. Like those in the Flatwoods, residents in the North Central Hills identified with people in the Tennessee-Tombigbee Hills and were allied with them politically.



Jackson Prairie Region

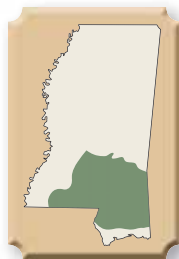
South of the North Central Hills is a soil formation known as the Jackson Prairie. This area, which is similar to the Tombigbee Prairie except that it has more woodland, extends from Hinds through Rankin, Madison, Jasper, Newton, Scott, Clarke, and Wayne counties and into Alabama. The dark soil of the Jackson Prairie is fertile and contains abundant quantities of limestone and the clay from which cement is produced. The social and political customs of the people who lived in the Jackson Prairie region were similar to those in the Tombigbee region.

Above: The North Central Hills region is sometimes referred to as a plateau because of its elevation. **Below:** This road runs through the Bienville National Forest, located in the Jackson Prairie. **Opposite page, above:** Farmers along the Pontotoc Ridge still grow corn as the Indians once did. **Opposite page, below:** The soil of the Flatwoods makes it better for trees than for agriculture.





Above: This aerial view of the Piney Woods region was taken near Mendenhall in Simpson County. **Below:** The original longleaf pine forests of the Piney Woods region have been largely replaced by pine tree farms.



Piney Woods Region

South of the Jackson Prairie and east of the Brown Loam region is a vast expanse of woodlands called the Piney Woods, or Pine Hills. This region, which is also known as the Longleaf Pine Belt, was a spectacular forest of uncut longleaf pine when the white settlers first came to Mississippi. Although most of the region lies three hundred to eight hundred feet above sea level, the loamy soil in the river bottoms makes profitable agriculture possible.

Throughout most of the antebellum period, a thriving cattle industry existed in the Piney Woods, and many people in the area farmed only to supplement their herding. While their cattle grazed in the forests, the herds-men grew small vegetable patches. To travelers passing through the Piney Woods, it appeared that these vegetable patches were the only means of livelihood for the local residents. The quaint and independent Piney Woods folk were *caricatured* (mocked, misrepresented) as poor whites who were idle, lazy, and unproductive. However, this was not an accurate picture of these people who made their living raising cattle and sheep, and who once a year drove their livestock and large flocks of turkeys to the markets in Mobile and Pascagoula.

During the secession crisis in 1861, many people in the Piney Woods wanted to remain in the Union. After Mississippi seceded from the Union and the Confederate States of America was established, a group of citizens in Jones County, led by Captain Newton Knight, seceded from the state of Mississippi and established the Free State of Jones.



Since the Civil War, the term “Piney Woods,” like the term “Northeast Hills,” has referred more often to the social and political customs of that section rather than its geographic characteristics. In the early 1900s, the Piney Woods united with the Northeast Hills in support of so-called redneck leaders.



Coastal Meadows Region

Extending fifteen to twenty miles inland from the Mississippi Gulf Coast are the Coastal Meadows. Although the surface is generally flat, the yellow-gray soil is sandy and not highly fertile. Throughout the nineteenth century and into the early years of the twentieth century, the Gulf Coast was sparsely populated.

During the Great Depression of the 1930s, Mississippi started a program called Balance Agriculture with Industry (BAWI) to attract industry to the state. Under the BAWI program, Ingalls Shipbuilding was established at Pascagoula in 1938 and built many military ships for the U.S. Navy during World War II. In June 1941, the U.S. Army Air Corps established Keesler Field (now Keesler Air Force Base) at Biloxi. It soon became one of the largest military installations in the country.

After World War II, Mississippi’s sandy beaches along the coastline, which were man-made, became the state’s major tourist attraction. The Gulf Coast soon became the most heavily populated section of the state. The rapid increase in population along the coast made it an important political area in Mississippi during the postwar years. Because of its beautiful beaches and its many tourist attractions, local residents sometimes call the Gulf Coast the Mississippi Riviera.

Something Extra!

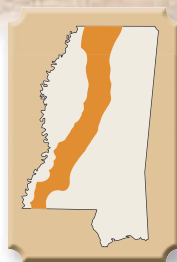
The term “Mississippi Riviera” is a reference to the French Riviera on the northern shore of the Mediterranean Sea, which is one of the world’s most popular resort areas.

Below: Although the Coastal Meadows region is more heavily populated than it has been in the past, there are still places where you can see it as it was originally, with salt marshes, swampy lowlands, and coastal lagoons.



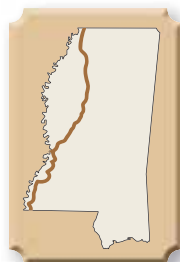


Above: The Brown Loam region is a large area that extends all the way from the Tennessee to the Louisiana border. Though the soil is rich, it has been subject to poor farming practices in past years. **Below:** The Loess Bluffs also extend the length of the state. This cross section of the bluffs can be seen near Natchez.



Brown Loam Region

To the west of the North Central Hills and the Piney Woods, extending from Tennessee in the north to Louisiana in the south, is a highly fertile soil belt called the Brown Loam region, which is separated from the Delta and the River Lowlands by a narrow strip of loess bluffs, or hills. This region's history could serve as a case study of soil abuse. In the antebellum era, many large and prosperous plantations dotted the Brown Loam region. Because of its large slave population, this region was also called the Black Belt. After the Civil War, the Brown Loam region suffered from a high concentration of sharecropping and **farm tenancy** (renting farmland from another farmer and paying rent in cash or shares of produce). Years of abuse and misuse depleted the soil, and it was badly eroded. However, sound conservation practices and good land management have restored some of the region's productivity, and cotton, corn, and soybeans are grown in the region today.



Loess Bluffs Region

West of the Brown Loam region is a soil area called the Loess Bluffs, which extends the length of the state from Tennessee to Louisiana. These bluffs, which are approximately five to fifteen miles wide, were formed by prehistoric dust storms sweeping eastward across the lower Mississippi valley. **Loess soil** (windblown dust that accumulates and forms a ridge of bluffs as it approaches higher elevations) is highly fertile but also susceptible to erosion. Farmers in the Loess Bluffs grew cotton primarily and were similar in their social and political interests to the planters in the Delta and the River Lowlands.



Delta-Yazoo Basin Region

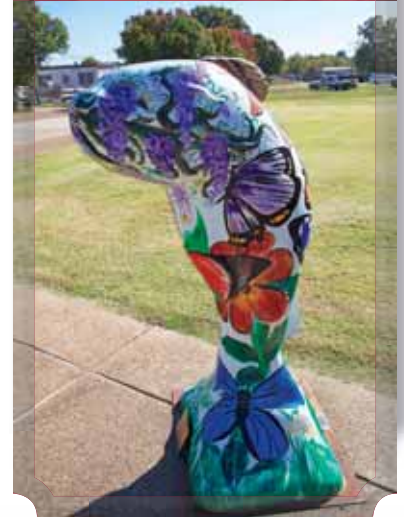
West of the Loess Bluffs and north of Vicksburg is the Yazoo Basin, which includes some of the most fertile soil in the world. The Yazoo Basin, which is better known as the Mississippi Delta, is a wedge of land about two hundred miles long and eighty-five miles wide. The rich, dark, **alluvial soil** (soil that was deposited by running water) is thirty-five feet deep in some parts of the Delta. It was deposited in this region during thousands of years of annual flooding of the Yazoo Basin. In the Delta's swampy backwaters, the land drains poorly and the soil contains a high clay content. This soil is black and sticky and is often referred to as "buckshot" or "Mississippi mud."

Although there were some plantations in the Delta before the Civil War, the Delta planters did not achieve the prestige and prominence enjoyed by their counterparts in the counties along the Mississippi River south of Vicksburg. Before the Civil War, the lack of an effective flood control system prevented the development of the Delta's great agricultural potential. Levee construction in the 1880s reduced the dangers from annual flooding, and the Delta population grew rapidly. Like the terms "Piney Woods" and "Northeast Hills," the word "Delta" has become more than a geographic term. The Delta describes a political and socioeconomic section with a lifestyle and culture that is different from other parts of Mississippi.

The Mississippi Delta has been called "the most southern place on earth." The history of the Delta is a *microcosm* (miniature representation) of southern history. It has been the scene of enormous wealth and *debilitating* (devastating, harmful) poverty. It has produced many famous writers, but it has one of the highest rates of illiteracy in the nation. It is the ancestral home of thousands of African Americans now living in New York, Chicago, Detroit, and Oakland. It is one of the most fascinating places in the place we call Mississippi.

Something Extra!

The Delta town of Belzoni is known as the **Catfish Capital of the World** and holds a **World Catfish Festival** every April.

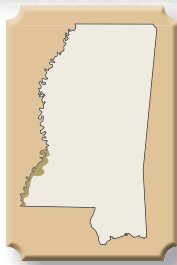


Below: The rich, deep soil of the Delta-Yazoo Basin grows a variety of crops and is home to many catfish farms.





Top: During the antebellum period, cotton cultivation made the River Lowlands region the wealthiest place in the state. The huge cotton plantations are mostly gone, but many crops are still grown there. **Above:** The River Lowlands region follows the banks of the Mississippi River from Vicksburg to Louisiana.



River Lowlands Region

From Vicksburg southward to where the Mississippi River flows into Louisiana, between the Loess Bluffs and the eastern bank of the Mississippi River, is a highly fertile soil region called the River Lowlands. The soil in this region, like the Delta, is composed largely of silt and loam. During the antebellum period, this region was one of the wealthiest sections in the state. Its large and highly profitable cotton plantations produced many wealthy families. The heaviest concentration of Mississippi's slave population was also located in these counties along the river. Natchez, the county seat of Adams County, was the largest town in this region. With its large and gracious mansions, and its plantation heritage, Natchez has become a symbol of the Old South.

Reviewing the Section

1. Define in sentence form: antebellum period, geologist, loess soil.
2. Into what twelve soil regions is Mississippi divided?
3. Why did the Delta-Yazoo Basin become a more successful agricultural region beginning in the 1880s?

Of Special Interest

Eugene Woldemar Hilgard, the "Father of Soil Science"

Eugene Woldemar Hilgard's 1860

Report on the Geology and Agriculture of the State of Mississippi is a landmark in the history of American agriculture. Hilgard was the state geologist and only twenty-six years old when he published this report. The first sentence in the section on agriculture was a question: "What is a soil?" Hilgard spent the next fifty-seven years of his life trying to answer that question. For his lifelong devotion to the study of soil chemistry and his remarkable achievements, Hilgard was awarded honorary doctoral degrees

from The University of Mississippi, the University of Michigan, Columbia University, the University of Heidelberg in Germany, and the University of California.

After the Civil War, Hilgard was appointed Professor of Experimental and Agricultural Chemistry at The University of Mississippi, a position he held until 1873. After teaching for one year at the University of Michigan, Hilgard was appointed Professor of Agriculture at the recently established University of California in Berkeley.

Historians and scientists acclaim Eugene Woldemar Hilgard as the "Father of Soil Science." Professor Hilgard was born in Bavaria (a part of Germany) in 1833. Two years later, his mother and father with their nine children migrated to Belleville, Illinois. As a two-year-old, Hilgard took a fourteen-day wagon ride from his family home in Bavaria to the French port of Le Havre on the Atlantic Coast. After waiting four weeks for an ocean liner, he took a sixty-two-day voyage to New Orleans, and finally a twelve-day steamboat trip up



the Mississippi to his new home in Belleville.

In 1849, Hilgard went to the University of Heidelberg, where he studied chemistry under Professor Robert Bunsen, the inventor of the Bunsen burner. Hilgard was awarded a PhD in 1853 when he was only nineteen years old. In 1855, Hilgard was appointed assistant state geologist for Mississippi and moved to Oxford. He lived in Oxford until 1873, and all three of his children were born there.

If you take chemistry and use a Bunsen burner, remember that a young man who studied with Professor Bunsen at the University of Heidelberg later became the state geologist and a professor at The University of Mississippi.

The threads of history wind and wind all around us, and we are all connected in some way or another to important events in the past.

During his long tenure at the University of California, Hilgard published several articles on how to make California's *alkaline* (base; the opposite of acid) and *arid* (dry) soils more fertile and productive. Some consider this work to be among his most significant contributions. California newspapers and land companies glorified his achievements. The *San Francisco Examiner* wrote that Professor Hilgard had "made the deserts bloom and transformed the alkali plains into fields of waving grain."

We all love those lines in "America the Beautiful" about "amber waves of grain" and "the fruited plain." Perhaps we owe those lines to Professor Eugene Hilgard. Professor Hilgard died in 1916 at the age of eighty-three.

Section 4

Natural Resources

Below: A swamp is a forested wetland. In the past, swamps were often drained for agriculture. Now, they are recognized as an important part of the environment, providing fresh water and oxygen, and a place for aquatic life to breed. This swamp is located in the Delta, near Greenwood.

As you read, look for

- the state agencies that protect our environment and promote natural resource development;
- Mississippi's varied water resources;
- the importance of aquaculture to the state's economy;
- Mississippi's timber and mineral resources;
- terms: natural resource, tributary, drainage basin, groundwater, surface water, reservoir, aquaculture, lignite.



The controversy about environmental issues and climate change

has been prompted by the nation's increasing consumption of its **natural resources** (those things found in nature that are useful to humans), especially those that are not renewable. For example, a barrel of oil that is consumed cannot be replaced. In contrast, a forest, even after it has been cleared, can be renewed through a reforestation program.

Several state agencies protect Mississippi's environment and promote the development of its natural resources. One of the most important of these agencies is the Mississippi Department of Environmental Quality (MDEQ), which includes the Office of Geology, the Office of Land and Water Resources, and the Office of Pollution Control. The Mississippi Mineral Resources Institute (MMRI), which was established in 1972 at The University of Mississippi, promotes the development of economic minerals in Mississippi. Another important state agency that promotes a healthy environment in Mississippi is the Department of Wildlife, Fisheries and Parks.

Mississippi still has acres and acres of woodlands, clear creeks, and clean rivers. But it also has many urban communities like Corinth, Columbus, Greenville, Oxford-Lafayette County, Meridian, Tupelo-Lee County,

There are a number of state agencies, like the Mississippi Department of Environmental Quality and the Department of Wildlife, Fisheries and Parks, whose job it is to protect Mississippi's natural environment, both for the creatures that share the land with us, like this Great Blue Heron (below), and for the health and recreation of all Mississippians (bottom).



Something Extra!

Some city officials have considered granting bow hunters the right to hunt deer within city limits.



Below: The Pearl River, which forms part of Mississippi's western border with Louisiana, is one of our state's most historic rivers. Mississippi is blessed with an abundance of ground-water and fresh water in the form of streams, rivers, lakes, and reservoirs.

Natchez, Jackson, Vicksburg, Hattiesburg-Laurel, the Gulf Coast, and the burgeoning Southaven area, which is the fastest-growing area in Mississippi. Residents in towns and cities all across the state complain that the *encroachment* (advancement beyond proper boundaries) of city limits and subdivisions on the natural habitats of deer and other wildlife creates problems that the state has never encountered before.

Few states have the opportunity that Mississippi has to plan strategically for its future economic and municipal development. If Mississippi leaves that growth to happenstance, it will repeat the mistakes of its sister states. The state must find a way to meet the needs of an increasingly urban society without unduly disturbing the delicate balance of nature. If we lived as simply and as close to nature as did Mississippi's first inhabitants, there would be no problem at all. But our world is vastly different from theirs. Although we may admire and even envy the lifestyle of the Native Americans who lived in the scattered southern woodlands, few of us would trade the comfort and convenience of the twenty-first century for the days when man lived in a state of nature.

Water Resources

One of the most vital resources of Mother Nature is water. We drink it, bathe in it, irrigate our crops with it, transport goods on it, generate electrical power with it, and depend on it in our households and industries. We also swim in it, fish in it, and water ski on it. If we are lucky enough to have a boat or a yacht, we can cruise on it. It is a resource for which there is no substitute, and no synthetic water has yet been discovered or designed. Mississippi is blessed with an abundant supply of clean and clear water, and we must take care not to pollute our streams, ponds, lakes, and rivers.





Mississippi River

The Mississippi River, from which our state takes its name, is almost 2,500 miles long. It begins at Lake Itasca in Minnesota and empties into the Gulf of Mexico about 100 miles south of New Orleans. The location of New Orleans near the mouth of the mighty Mississippi makes it one of the most important seaports in the world. The Mississippi River basin extends from the Appalachian Mountains in the east to the Rocky Mountains in the west. A river system consists of a large river and several **tributaries** (smaller rivers or streams that flow into the larger river). A **drainage basin** is the area of land that drains into the tributaries and eventually into the larger rivers. The Mississippi River's 250 tributaries provide 14,000 miles of navigable waterways and drain approximately 1,250,000 square miles, or one-third of the continental United States. It is no wonder that some Native Mississippians called the Mississippi River the "Father of Waters."

Groundwater and Surface Water

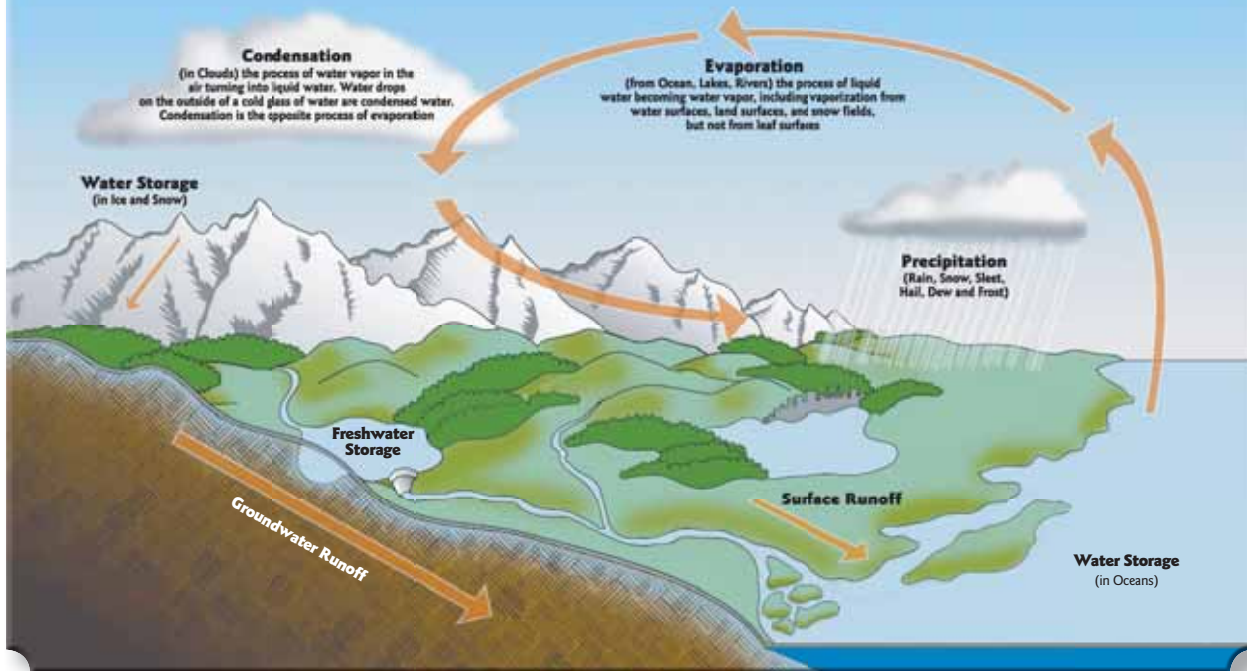
One of our state's most precious resources is its abundant supply of water, both groundwater and surface water. **Groundwater** is moisture that seeps into the subsurface and accumulates in rock formations called aquifers. From these aquifers, much of the groundwater returns to the surface in springs and wells. Groundwater is the primary source of the water consumed in most Mississippi towns and cities. **Surface water** is the water in lakes, ponds, rivers, and reservoirs.



Map 10 The Mississippi River

Map Skill: Which states
border the Mississippi River?

Figure 3 Hydrologic Cycle



Above: Sardis Lake, on the Little Tallahatchie River, is one of the state's six major reservoirs. Reservoirs serve several important functions, including flood control, recreation, and providing drinking water. Sardis was the first lake to be built as part of the Yazoo Basin flood control plan.

Reservoirs

There are six large **reservoirs** (man-made lakes where water is collected and kept in quantity for use) in Mississippi. The oldest reservoir is Pickwick Lake, located on the Tennessee River in the extreme northeastern corner of the state. Pickwick was developed by the Tennessee Valley Authority (TVA). The TVA is a federal agency established in 1933 to build flood control projects and to generate electrical power in rural areas of the South.

The water that flows over the reservoir's dam powers the machines, called *turbines*, that generate electricity at the power plant that is built near the reservoir.

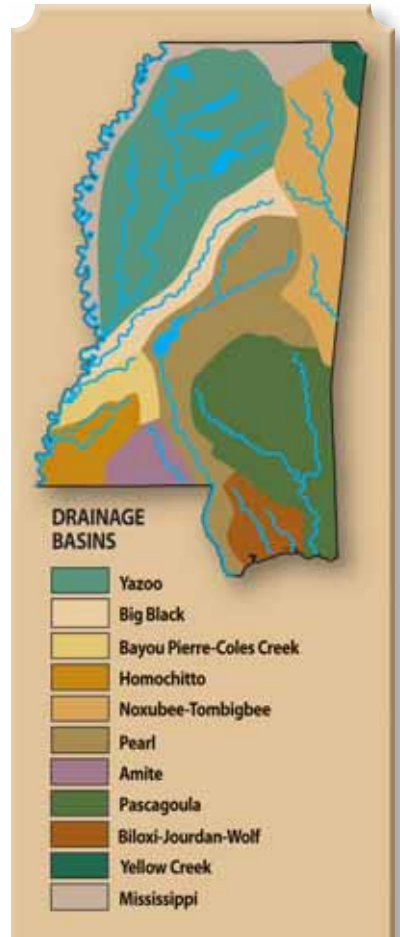
Four Mississippi reservoirs—Grenada on the Yalobusha River, Arkabutla on the Coldwater River, Sardis on the Little Tallahatchie River, and Enid on the Yocona River—were constructed to protect the Yazoo Basin from floodwaters that drained down from the Northeast Hills. The Yocona River is the modern name for the river the Chickasaw Indians called the Yoknapatawpha River.

The sixth and largest reservoir in Mississippi is both a flood control project and a popular recreational facility on the Pearl River at Jackson. It was



Map 11 Mississippi's Major Rivers and Lakes

Map Skill: Which two rivers form the borders between Mississippi and Louisiana?



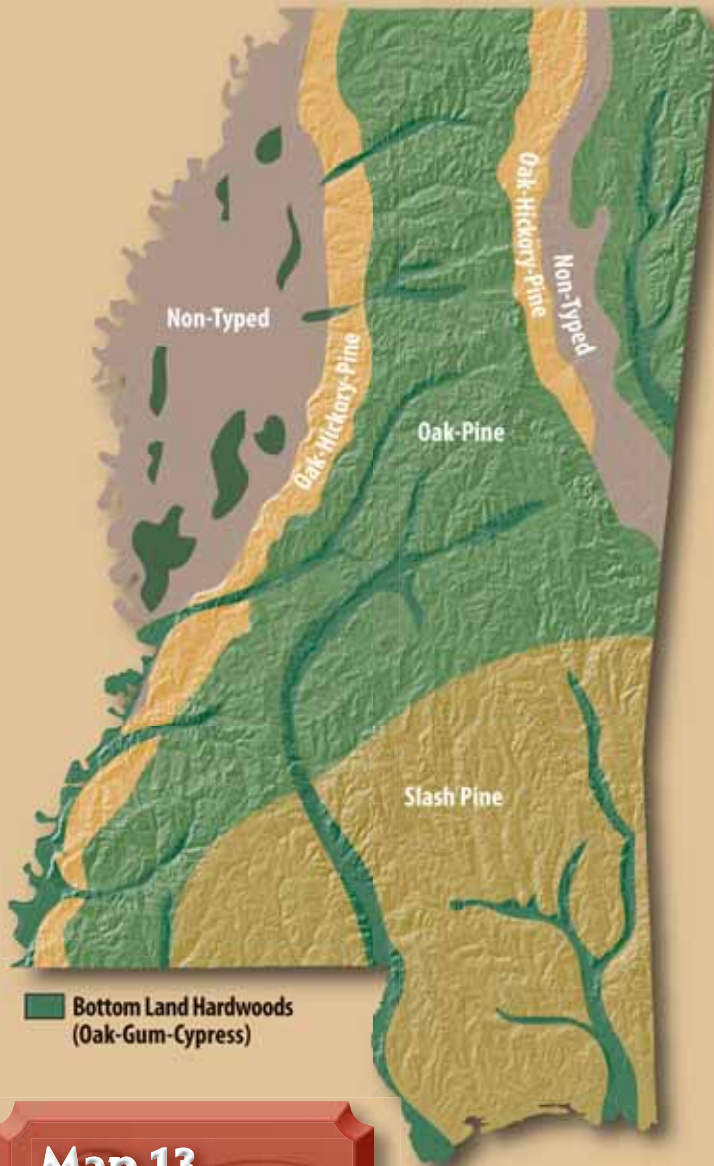
Map 12 Mississippi's Drainage Basins

Map Skill: Which drainage basins border Alabama?

named for Ross R. Barnett, Mississippi's governor from 1960 to 1964. The Barnett Reservoir was a state-funded project and was completed in 1964. The lake covers approximately 37,000 acres, has a 105-mile shoreline, and is bordered on the west by the Natchez Trace. The Barnett Reservoir is also the primary water supply for the city of Jackson.

Catfish Ponds

In addition to rivers and reservoirs, hundreds of catfish ponds dot the Mississippi landscape. Catfish production is the leading aquaculture industry in the United States. **Aquaculture**—which is also called “water farming” or “fish farming”—is the commercial production of freshwater animals, like catfish, and aquatic plants. Catfish farming generates more than 46 percent of the total value of the nation's aquaculture. Approximately 94 percent of the acreage devoted to catfish farms is located in Alabama, Mississippi, Arkansas,



Map 13 Mississippi's Forest Types

Map Skill: Which two forest types are most prevalent in Mississippi?

Something Extra!

A cord of wood has a volume of 128 cubic feet, the equivalent of a stack of wood 4 feet high by 4 feet wide by 8 feet long.



and Louisiana. Mississippi has more water surface acres in catfish farms than the other three states combined. In 2009, there were 70,000 water surface acres in catfish farms scattered across the Mississippi Delta and the Tombigbee Prairie.

Timber Resources

Even though Mississippi has fair weather and fertile soil, most of its land surface is not used for crop production. More of the state's land surface is devoted to forestry than to agriculture—or to shopping centers, football fields, homesites, cow pastures, and all other land uses combined. Mississippi has 19.8 million acres of forestland, which is 65 percent of the state's total land area.

As favorable as Mississippi's climate is for agriculture, it is even more favorable for timber production. In addition to good soil and high rainfall, a critical growth factor for forests is annual temperature. Trees do not grow when the temperature is below 43°F. Because Mississippi's average January temperature is approximately 46°F, the growing season in Mississippi is virtually continuous and yields a cord of wood per acre per year.

As promising as its timber resources were during the antebellum period, Mississippi's plantation society and its dependence on the cotton economy

prevented the state from developing its timber resources. In the aftermath of the Civil War, which devastated the cotton economy, Mississippi turned to its vast stands of original timber and began harvesting this valuable resource.

Mineral Resources

Mississippi has not been a major player in the nation's never-ending search for mineral resources. It does, however, have commercial quantities of sand, gravel, and clay, as well as oil and gas. The first production of natural gas in Mississippi occurred in 1926 with the discovery of the Amory Field in Monroe County. The discovery of the Tinsley Oil Field in Yazoo County in 1936 created a flurry of exploration that found many new oil fields, mostly in the southern part of the state.

One of Mississippi's most significant mineral resources is its abundant supply of **lignite** (a low grade of coal). According to the latest estimates by various geological agencies, Mississippi has about 13 percent of the nation's lignite reserves.

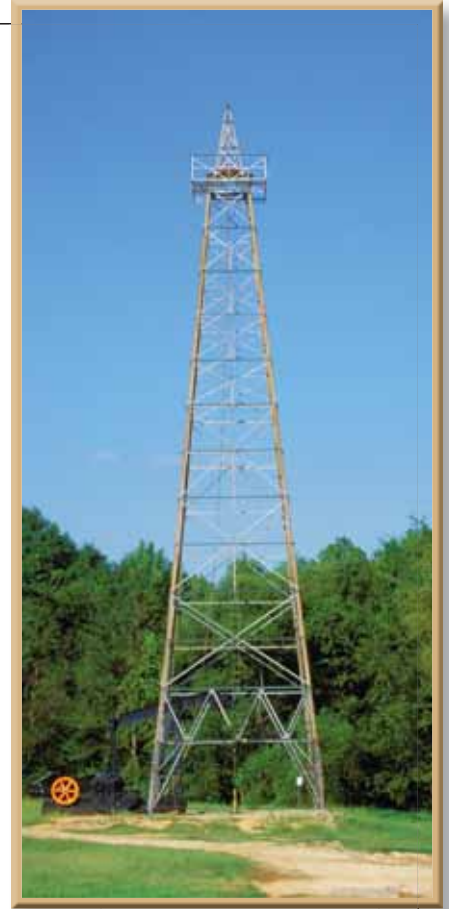
The Red Hills Power Plant near Ackerman in Choctaw County produces electrical power for the Tennessee Valley Authority by burning lignite that is supplied by the Mississippi Lignite Mining Company. Mississippi's lignite is a high-quality mineral, and the site that supplies the Red Hills Power Plant covers more than ten thousand acres. A second lignite power plant has been constructed in Kemper County and is scheduled to begin operation in 2014.

The Face of the Land

Although Mississippi's beautiful landscape has been scarred over time, it has not been defaced. Hunters and fishermen no longer enjoy the *pristine* (unspoiled) environment that once existed, but there are still large stretches of woodlands that abound in a variety of wild game. Most rivers, creeks, and streams are not polluted. The state's 6 reservoirs consist of 493 square miles of water surface and provide recreational attractions. Our state and national parks have also preserved thousands of acres in Mississippi from commercial development. To preserve what remains, traditional conservation practices must be supplemented by additional laws to protect our land and waterways. We must all do our part to preserve our state's natural habitat as long as we can.

Reviewing the Section

1. Define in sentence form: tributary, aquaculture, lignite.
2. What is the difference between groundwater and surface water?
3. What are the three critical growth factors for forests?



Above: Oil was first discovered in Mississippi in 1936 in Yazoo County and is still produced commercially. This early oil derrick is on display at the Mississippi Agriculture and Forestry Museum in Jackson.

Chapter Review

Chapter Summary

Section 1 Where in the World Is Mississippi?

- Mississippi is a state in the Lower South with 82 counties and a capital named Jackson.
- Mississippi's latitude is between 30°13' N and 35° N; its longitude is between 88°07' W and 91°41' W.
- Mississippi's total area is 48,434 square miles. It is the 32nd largest state.
- According to the 2010 census, Mississippi's population was 2,967,297.

Section 2 Fair Weather

- Mississippi's long growing season and high average rainfall made it an agricultural state.
- Our favorable weather conditions produce a variety of flora and fauna.
- Mississippi suffers from natural hazards: droughts, floods, tornadoes, hurricanes, and thunderstorms.
- Some of our costliest natural disasters were the Great Flood of 1927 and Hurricanes Camille (1969) and Katrina (2005).

Section 3 Fertile Soil

- Rich, fertile soil brought many settlers into Mississippi during the 1830s; they brought with them traditions of land ownership and slavery.
- Mississippi's twelve soil regions can be identified by their soil characteristics, geographic features, and modern social and political characteristics.
- Mississippi's highest point is in the Tennessee-Tombigbee Hills.
- Rich, dark soil in the Tombigbee Prairie gave rise to prosperous antebellum plantations.
- The Pontotoc Ridge was farmed by Chickasaw, then white farmers, then sharecroppers.

- The Flatwoods is one of the state's least productive soil regions.
- The North Central Hills region is also called the Sand Clay Hills, Red Clay Hills, and North Central Plateau.
- Dark, fertile soil in the Jackson Prairie contains limestone and clay for producing cement.
- The first white settlers in the Piney Woods developed a cattle industry.
- Shipbuilding and beaches have made the Coastal Meadows a heavily populated region.
- Abuse and misuse depleted the Brown Loam region's soil, but it is now being restored.
- The Loess Bluffs extend the length of the state and have fertile soil susceptible to erosion.
- The Delta-Yazoo Basin includes some of the most fertile soil in the world.
- The River Lowlands region had profitable cotton plantations during antebellum days.

Section 4 Natural Resources

- The Mississippi River begins in Minnesota and empties into the Gulf of Mexico south of New Orleans.
- We have an abundant supply of both groundwater and surface water.
- Mississippi has six large reservoirs and hundreds of catfish farms.
- More Mississippi land surface is devoted to forestry than to all other land uses combined.
- Our mineral resources include sand, gravel, clay, oil and gas, and lignite.
- Mississippians must all do our part to protect our state's natural habitat.

Activities for Learning

Understanding the Facts

1. In what region of the United States is Mississippi located?
2. What is the length of the state of Mississippi from north to south and east to west?
3. What types of natural disasters have affected Mississippi?
4. Summarize the Great Flood of 1927's impact on Mississippi.
5. What were the two major causes of Hurricane Katrina's destruction along the Mississippi Gulf Coast?
6. What is the highest point in Mississippi?
7. Identify a soil region in Mississippi where alluvial soil can be found.
8. What did Native Mississippians call the Mississippi River?
9. Identify Mississippi's six reservoirs.

Developing Critical Thinking

1. Using information from the opening paragraph of Section 1, write five sentences describing Mississippi's location. Use this example as your first sentence: "Mississippi is located in the Western Hemisphere." Now write four additional sentences making each subsequent sentence more geographically precise than the previous one.
2. Mississippi's population increased by 122,639 people from 2000 to 2010. If Mississippi's population was 2,967,297 in 2010, what was its population in 2000?
3. Mississippi's total land area is 46,914. Now calculate Mississippi's population density by using this formula: $\text{Total Population} \div \text{Land Area} = \text{Population Density}$.

Writing across the Curriculum

1. Create a flyer that advertises Barnett Reservoir. Your flyer should include the reservoir's date of completion, location, size, and recreational uses.

2. Go to www.accuweather.com/en/weather-video/weather-history-1936-tupelo-g/888277817001 and watch the video about the Tupelo Tornado of 1936. Now assume the role of a newspaper reporter and write an article about the destruction caused by this tornado. Be sure your article answers the essential questions of reporting: Who? What? Where? When? How? and Why?

Exploring Mississippi on the Internet

1. Go to <http://www.new.ms.gov/webcontent/partnerSite.html>. On the interactive map of Mississippi state parks, choose three of the parks that you would like to visit. What features does each park have that makes it interesting to you? Can you determine in which of Mississippi's twelve soil categories each of your favorite parks is located?
2. Go to <http://quickfacts.census.gov/qfd/states/28000.html>. According to the 2010 U.S. Census, what are the eight racial or ethnic categories in Mississippi? What percentage of the state population does each group represent?

Building 21st Century Skills: Using Your Textbook

Making effective use of your textbook is an important skill. Your textbook has two parts: the narrative and visual information. The narrative tells the story of Mississippi while the visual information (charts, illustrations, maps, and timelines) makes the narrative come alive.

The narrative is divided into sixteen chapters. Each chapter contains several sections with each section identified by a major heading (white lettering with a navy blue background). Lower-level headings are set in bold orange and green letters. Scan the headings before you begin to read to better understand the plan of each chapter.

Try this activity with this chapter and the other chapters in the textbook: Prepare an outline of Chapter 1 using the headings in the chapter.