



# Our Special State

**W**elcome to our Georgia! You may be a native Georgian. Or you may have arrived here from Mexico, Vietnam, India, Japan, Korea, or other nations and U.S. states. We are glad you are here and hope you enjoy learning more about your home.

In the two chapters of this unit, you will learn about our geographic regions, our climate, our waterways, and other natural resources of the state. You will also read about the many plants and animals you can see as you walk around your neighborhood, visit a public park, or travel on Georgia's back roads.

A special feature in this unit takes you on a visual trip to "Georgia's Wonders," seven unique places in our state that are the result of nature, time, and geography. But before we begin studying about the state we call home, let us look at what geography means.



**Geography** affects where people live and how they make a living. In the Blue Ridge region, most farms (left) are small. The geography of central and southern Georgia is good for growing peaches (above).

# Where in the World is Georgia?

### Chapter Preview

**Georgia character word:**

Responsibility

**Geographic Terms:** geography, relative location, absolute location, hemisphere, axis, equator, parallels, latitude, meridians, prime meridian, longitude, region, precipitation, wetland, barrier island, continental shelf, Fall Line, climate, weather, vertical climate, drought, wind current, trade winds, prevailing westerlies, ocean currents, hurricane, nor'easter, tornado, El Niño, La Niña, global warming

**Places:** Appalachian Plateau region, Ridge and Valley region, Blue Ridge region, Piedmont Plateau, Coastal Plain region, Okefenokee Swamp

**Section 1** What is Geography?

**Section 2** Geographic Regions of Georgia

**Section 3** Georgia's Climate



**H**ave you ever wondered why Georgia summers are so hot and sticky? Perhaps the local weather forecaster predicted snow, but you woke up to see nothing but a little frost on the ground. What would life be like if you lived on the beach or in the mountains? To answer these questions, we need to understand the six essential elements of geography and the role of geography in our lives.



**Above:** The Atlantic Ocean, seen here from Jekyll Island, brought European explorers and settlers to Georgia. **Left:** From a vantage point near Hiawassee, the Blue Ridge Mountains stretch off into the distance. The Blue Ridge are part of the Appalachian Mountains and run from northeastern Georgia up through Virginia.

# Signs of the Times

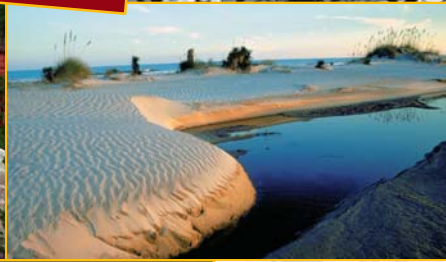
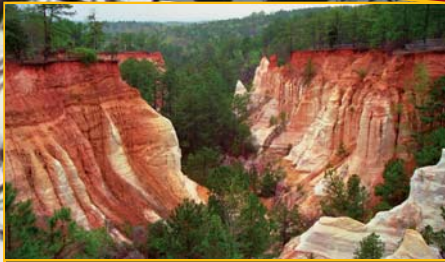
## Georgia Today

### Vital Statistics:

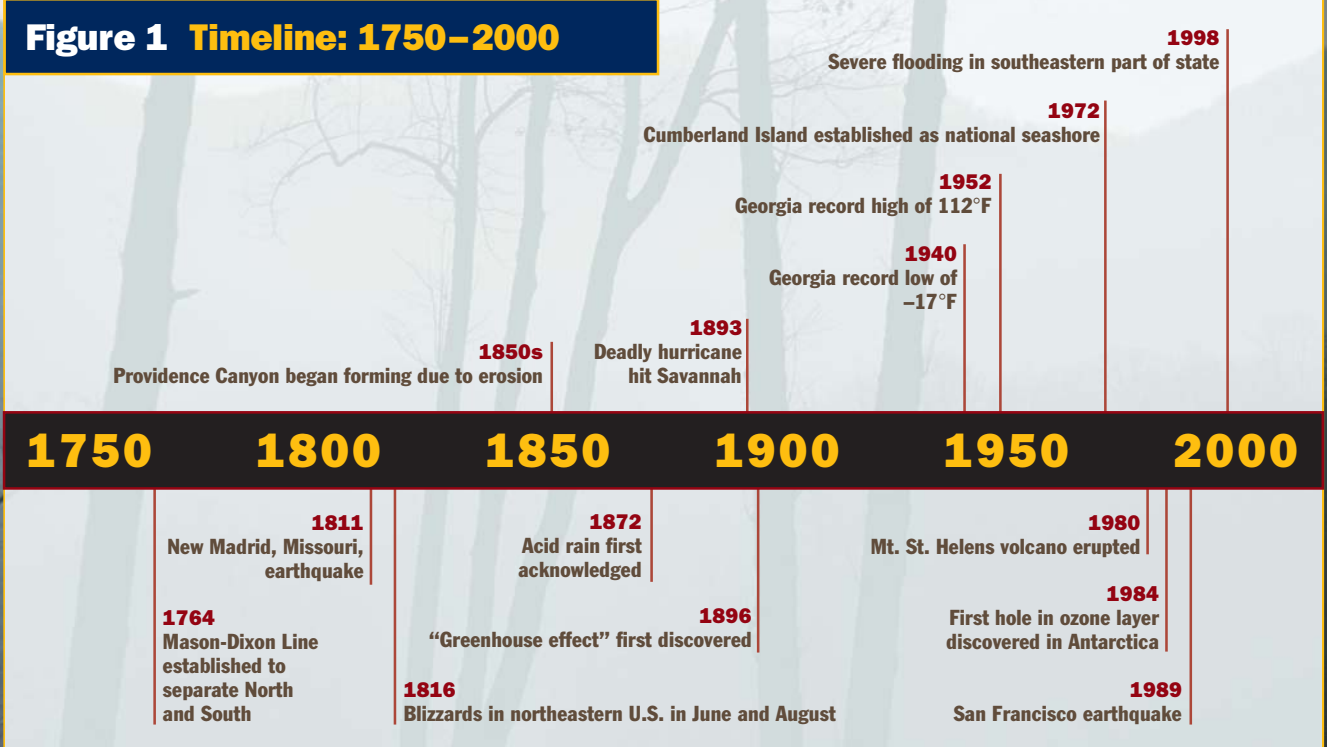
Land area: 58,910 square miles  
 Inland water: 854 square miles  
 Number of bordering states: 5  
 Major bodies of water: 1  
 Number of islands: 18  
 Number of physiographic regions: 5  
 Number of counties: 159  
 Highest point: Brasstown Bald  
 Lowest point: Atlantic coastline

### Location:

Latitude and longitude: 30°–35°N Latitude,  
 80°–85°W Longitude  
 Location within United States: South  
 Location within South: Southeast  
 East-West divider: Fall Line  
 Geographic center of state: Twiggs County  
 Driving time: 10 hours from northwest corner of  
 state to southeast corner



**Figure 1 Timeline: 1750–2000**



# Section 1

## What is Geography?

The term *geography* comes from the Greek word *geographia* and means “Earth’s description.” **Geography** is the science of studying Earth as the home of humans. Geography helps us understand ourselves, the places where we live, our relationships with the natural environment, and our interdependence with other places and people in the United States and throughout the world. Studying Georgia’s geography helps us answer such questions as why the Indians lived in certain areas of the state, why early settlers moved to particular areas, how the location of a town affects its economy, and even why department stores carry certain kinds of clothing.

Now that you can define the word *geography*, what do you need to know to become a “geographically informed” person?

**Understand the world in spatial terms:** Be able to use maps and other tools to acquire, process, and report information; use mental maps to organize information about people, places, and environments; analyze the spatial organization of people, places, and environments on Earth’s surface;

**Understand places and regions:** Comprehend the physical and human characteristics of places; realize that people create regions to interpret Earth’s complexity; know how culture and experience influence people’s perceptions of places and regions;

**Understand Earth’s physical systems:** Know the physical processes that shape the patterns of Earth’s surface; understand the characteristics and spatial distribution of ecosystems on Earth’s surface;

**Understand the human systems of Earth:** Know the characteristics, distribution, and migration of human populations on Earth; understand Earth’s cultural mosaics, the concept of economic interdependence, the process, patterns, and functions of human settlement, and the influence of the forces of cooperation and conflict;

**Understand environment and society:** Comprehend how human actions modify the physical environment, how physical systems affect human systems, and the changes that occur in the meaning, use, distribution, and importance of resources; and, finally,

**Understand the uses of geography:** Realize how to apply geography to interpret the past, to understand the present, and to plan for the future.

### Location, Location, Location

When we talk about studying geography, we are simply describing a particular part of Earth—Georgia. So, as geographers, where are we?

One basic geographic skill is the ability to describe where a place is located. Location is either relative or absolute. **Relative location** describes where a place

## Section Preview

**As you read, look for:**

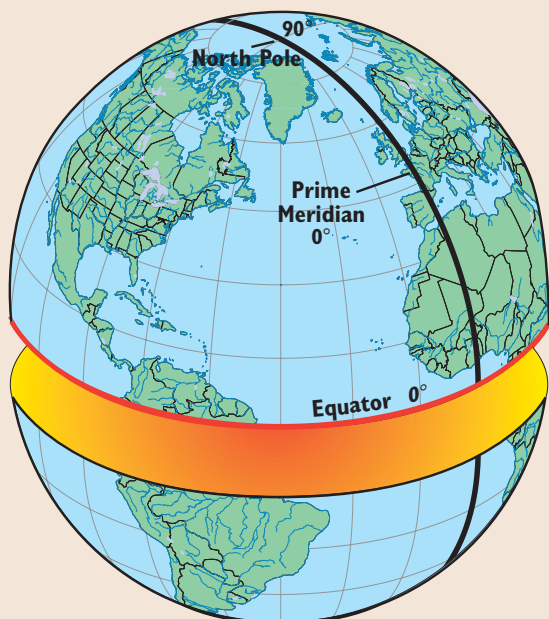
- six uses of geography,
- the difference between relative and absolute location,
- use of latitude and longitude to describe location, and
- **vocabulary terms:** geography, relative location, absolute location, hemisphere, axis, equator, parallels, meridians, prime meridian, and longitude.

## Did You Know?

On a map, you need to know where the **cardinal directions**—**north, south, east, and west**—are. It is also important to know the **intermediate directions**—**northwest, northeast, southwest, and southeast**. One symbol on a map helps you locate those directions. It is a **compass rose** (below).

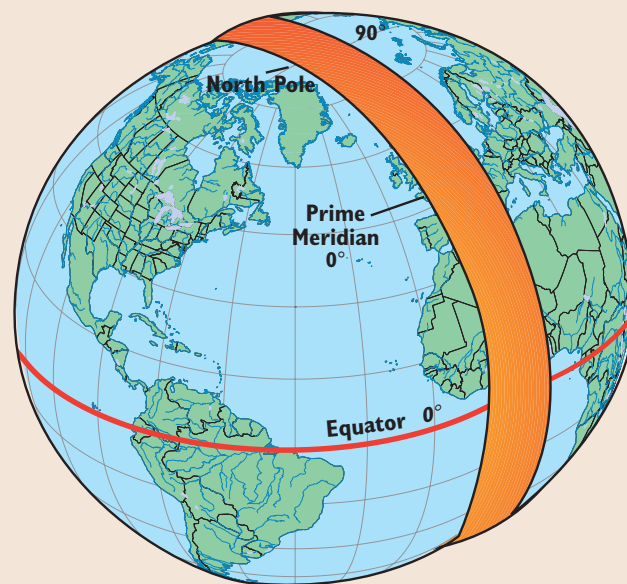


## Northern Hemisphere



## Southern Hemisphere

## Eastern Hemisphere



## Western Hemisphere

### Map 1 The Hemispheres

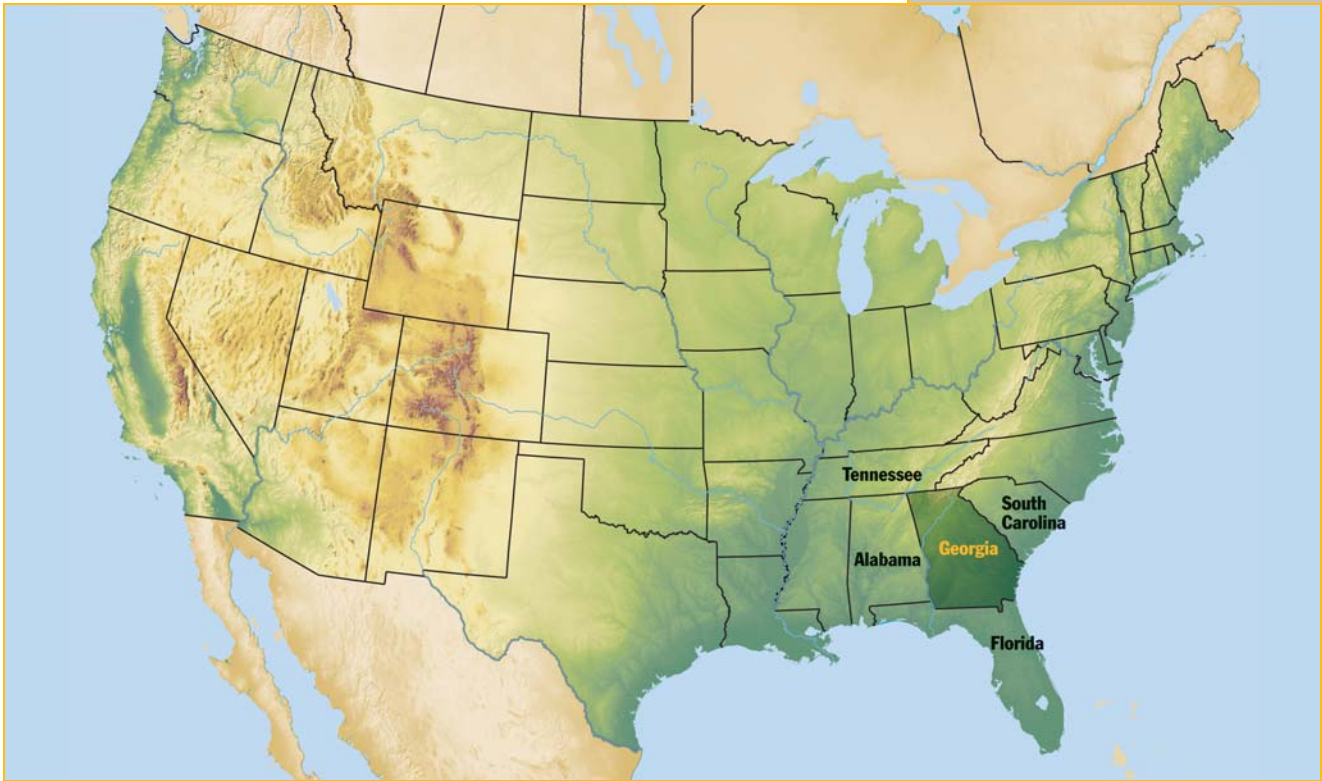
**Map Skill:** What other countries in North America lie in the northern hemisphere?

is located compared with other places. For example, Darien is located near Brunswick; Dalton is located eighty-eight miles northwest of Atlanta; Fort Benning is southeast of Columbus. You might describe your school's location by saying that it is near a certain mall or a particular business. Now, you try it. What is the relative location of your house or apartment to your school?

**Absolute location** identifies a precise position on Earth's surface. In your hometown, your street address designates a *local location* and defines the absolute location of your home. To find the absolute location of states or countries, we use maps and globes and we need markers more precise than street addresses.

Globes are round in shape like a sphere and are scale models of Earth. Spheres can be divided into two halves called **hemispheres**. If you examine the globe in your classroom, you will see that the globe turns on an **axis**, an imaginary straight line around which an object rotates. The north end of the axis is called the North Pole. The south end of the axis is called the South Pole. The line that goes around the globe exactly halfway between the two poles is called the **equator**. It divides Earth into two hemispheres. Something that may surprise you is that right this minute you are actually moving about 1,000 miles per hour. That is because Earth, which is about 25,000 miles around at the equator, is moving on its axis every twenty-four hours. Now, that's something to think about!

The northern hemisphere extends from the equator to the North Pole, and the southern hemisphere extends from the equator to the South Pole. The United States is located in the northern hemisphere, but there is more to the absolute location of our state.



## Latitude and Longitude

Examine the globe and you will find lines that run east and west side by side with the equator. These lines are called **parallels**. They are used to describe **latitude**, which is the distance north or south of the equator. Since there is only one equator, there is only one line on a globe which is  $0^\circ$  latitude. All of the other lines or parallels mark distances north (N) or south (S) of the equator.

These distances are measured in units called *degrees*. The North Pole is located at  $90^\circ$  N, and the South Pole is found at  $90^\circ$  S. Each degree can be divided into smaller measurements called *minutes* so that each degree contains 60 minutes. Each minute can be divided into even smaller measurements called *seconds*, so that each minute contains 60 seconds. Locations are usually written in just degree and minute designations. In expressing

latitude, you must always add the letter *N* or *S* to the number of degrees. For example, the port of Savannah is located at latitude  $32^\circ 02'$  N. Georgia is located between  $30^\circ 21'$  and  $35^\circ$  N latitude. However, that is only one of the pieces of information needed for an absolute location.

Examine the globe again and you will find lines that run from one pole to the other. These lines running north and south are called

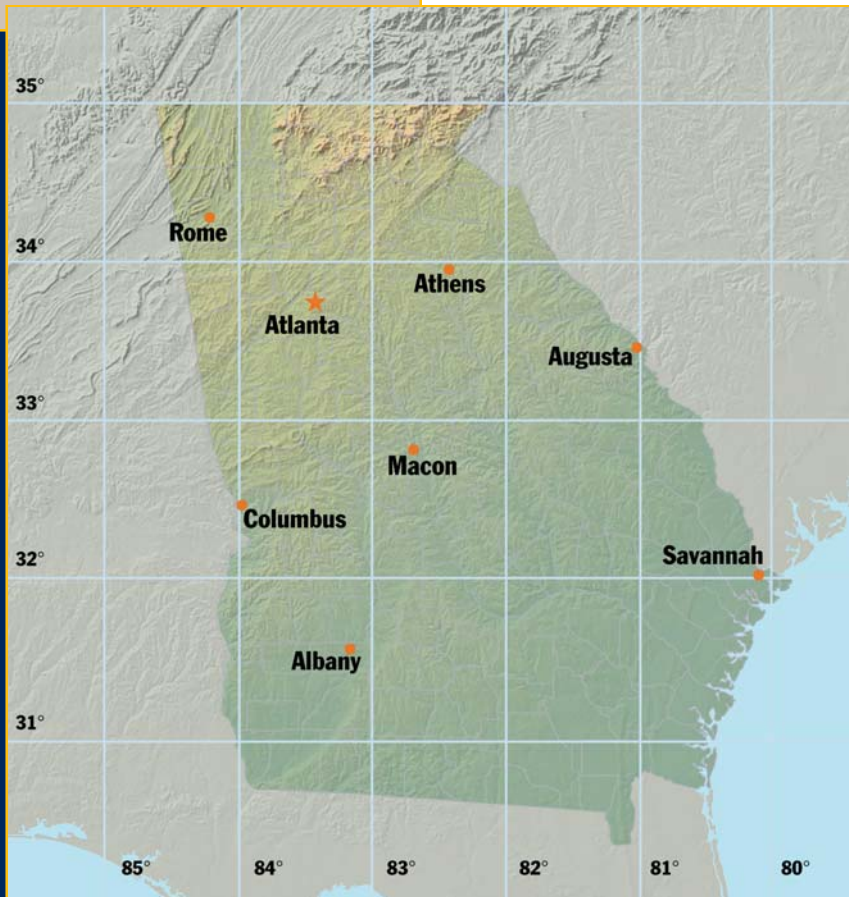
### *Did You Know?*

The **geographic center** of North America is located in **Rugby, North Dakota**. Rugby is **1,500 miles** from the Pacific Ocean, the Atlantic Ocean, the Arctic Ocean, and the Gulf of Mexico.

## Map 2 Georgia in the United States

**Map Skill:** Without using the examples already used, describe Georgia's relative location.





### Map 3 Latitude and Longitude

**Map Skill:** What Georgia city is located at  $33^{\circ} 57' N$  latitude and  $83^{\circ} 19' W$  longitude?

borders—Florida on the south, Alabama on the west, Tennessee and North Carolina on the north, and South Carolina along the Savannah River on the northeast. You can include that Georgia is also bordered by the Atlantic Ocean on the east.

However, if you wanted to share Georgia's absolute location with your pen pal, you would have to say that Georgia is located between  $30^{\circ} 21'$  and  $35^{\circ} N$  latitude and between  $80^{\circ} 50'$  and  $80^{\circ} 36' W$  longitude.

In terms of land area, Georgia is the largest state east of the Mississippi River. Its greatest length is 315 miles, and its greatest width is 250 miles. There are 58,910 square miles of land and 854 square miles of inland water in Georgia. The state has almost as much land as all of the New England states combined. The geographic center of the state is located at a point 18 miles southeast of Macon in Twiggs County.

**meridians.** The starting point for the meridians is the **prime meridian**, a line running from the North Pole through England and part of Africa to the South Pole. Meridians measure degrees of **longitude**, which tells how far east or west of the prime meridian a place is located. The prime meridian is located at  $0^{\circ}$  longitude. All locations west of the prime meridian are numbered and labeled with the letter *W*, and all locations east of the prime meridian are numbered and labeled with the letter *E*. Georgia is located between  $80^{\circ} 50'$  and  $85^{\circ} 36' W$  longitude.

If you wrote a pen pal in Australia and described where you lived, how would you describe Georgia's relative location? You might say that Georgia is located in the northern hemisphere, or in North America, or in the southeastern corner of the United States. You might add that five other states touch Georgia borders

### It's Your Turn

1. What is your relative, absolute, and local location? Can you determine your absolute location from the map on this page?
2. Define latitude and longitude.
3. If you go to five different Internet sites, you will probably find five different figures for Georgia's land area. Why would that be the case? Check it out.

## Section 2

# Geographic Regions of Georgia

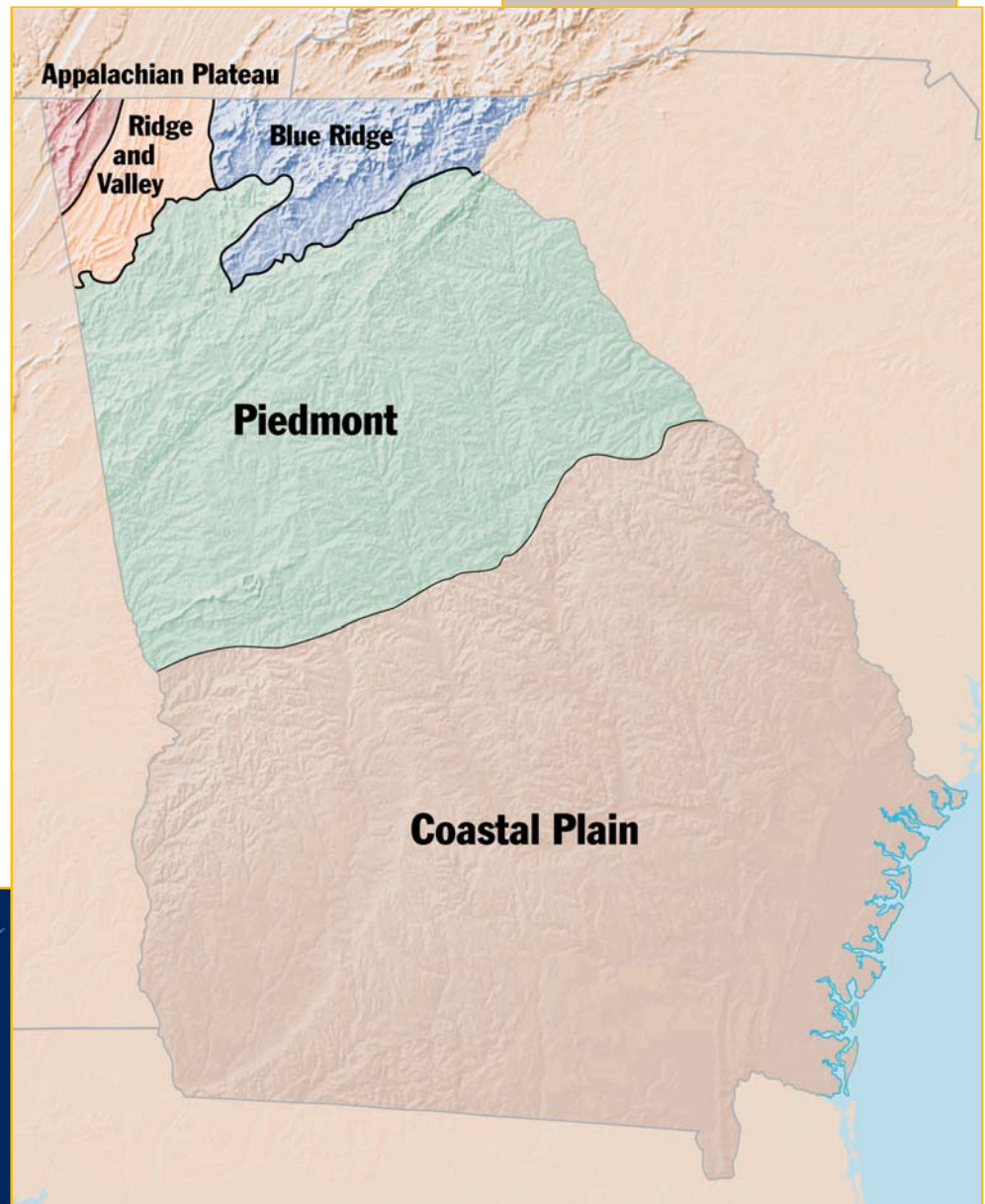
A **region** is the basic unit of study in geography. It is an area on Earth's surface that is defined by certain unifying characteristics. These characteristics may be cultural, human, or physical. A region may be defined by a government (such as the United States), a common language, climate, situation, or even landforms or the physical topography. We live in several regions—in North America, in the United States, in the South, in the southeastern United States, in Georgia, and even in a particular region or section of the state.

The people who call Georgia home enjoy a wide range of geographic areas. There are twenty-four physiographic patterns (natural characteristics of Earth's surface) in Georgia. These natural divisions differ both in area and in their land base, which may be limestone, clay sediment, shale, or marsh. There are enough similarities among the twenty-four patterns, however, that they can be combined into five major physiographic regions: (1) the Appalachian Plateau region, (2) the Ridge and Valley region, (3) the Blue Ridge region, (4) the Piedmont Plateau, and (5) the Coastal Plain.

## Section Preview

As you read, look for:

- the five regions of Georgia,
- the Fall Line, and
- **vocabulary terms:** region, precipitation, wetland, barrier island, continental shelf, and Fall Line.



### Map 4 Georgia's Geographic Regions

**Map Skill:** In which geographic region do you live?



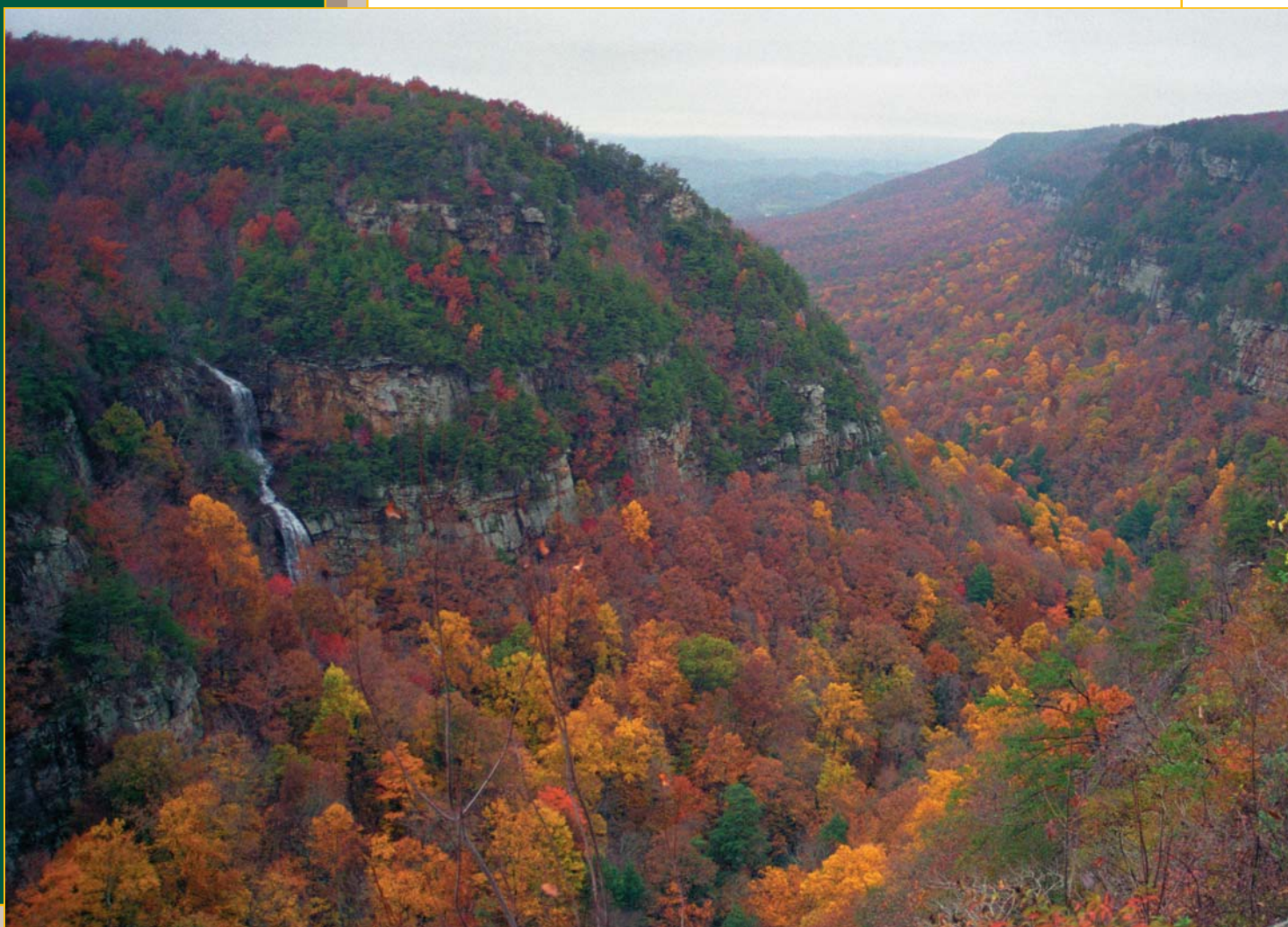
## The Appalachian Plateau Region

The smallest of the physiographic areas, the Appalachian Plateau region is a maze of limestone caves, deep canyons, and interesting rock formations. Many people refer to this region in the far northwestern corner of the state as the “TAG Corner” because it is the point at which Tennessee, Alabama, and Georgia meet. Also sometimes

called the Cumberland Plateau, the region has the broad, flat-topped, 100-mile-long Lookout Mountain on one side and Sand Mountain on the other, separated by ridges of limestone. In between these two mountains is a long, narrow valley. Soils in this region are a mixture of limestone, shale, and sandstone and are well suited for the region’s hardwood forests and pastures.

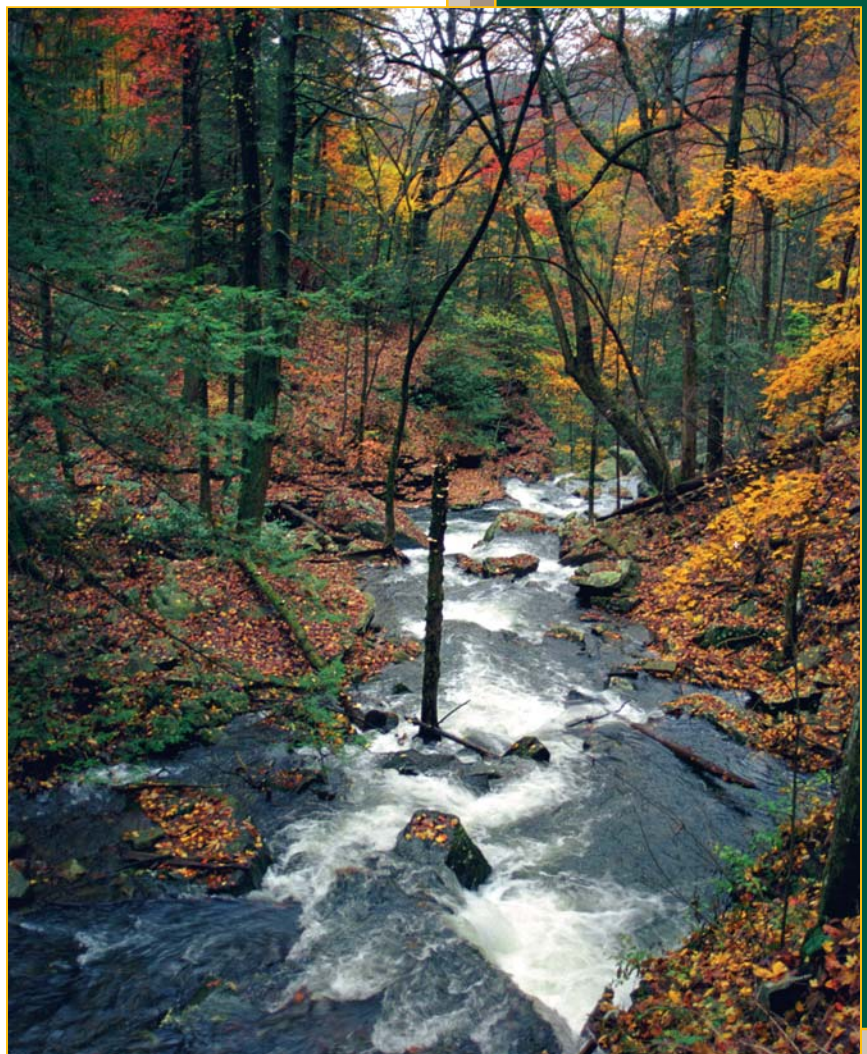
With an elevation (the height above sea level) of up to 2,000 feet, this region is one of the most scenic but least traveled parts of the state. Civil War buffs frequent the Chickamauga and Chattanooga National Military Park, the site of historic Civil War battles. Cloudland Canyon, located between Trenton and Lafayette, has two beautiful waterfalls that cascade over layers of sandstone, dolomite, and shale millions of years old.

**Cloudland Canyon** (below) in Dade County is one of the Southeast’s most beautiful natural sights. The steep, 1,980-foot canyon was cut by Sitton Gulch Creek (opposite page, below) over millions of years. Cloudland Canyon State Park is a favorite destination for hikers.





Visitors to the Chickamauga and Chattanooga National Military Park will see Civil War cannon (left) and monuments to the units that fought there (above).





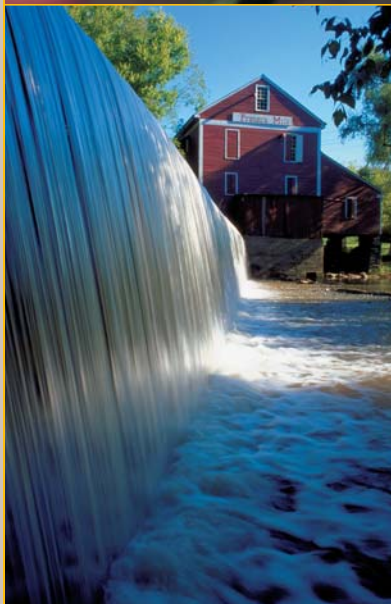
## The Ridge and Valley Region

Between the Blue Ridge Mountains and the Appalachian Plateau lies the Ridge and Valley region. This area of the state has low open valleys and narrow ridges that run parallel to the valleys. Elevation ranges from 700 to 1,600 feet above sea level. Most of the soil in the region is a mixture of shale and sandstone on the ridges and limestone and clay in the valleys. Forests and pastures dominate the region, but there are flat and fertile farmlands with fields of grain, pastures for cattle, and rows of apple orchards near Ellijay. The valleys are divided by steep and narrow ridges capped with limestone. The rocks that make up the ridges are very resistant to erosion. Ridges include Taylor Ridge and Pigeon Mountain.

The region runs from Polk and Bartow counties northward to Chattanooga, Tennessee. It is known for its industry, particularly textile and carpet manufacturing. Dalton, known as the “carpet capital of the world,” leads the way.

A famous story told by the late Bernice McCullar in her *This Is Georgia* explained the northwest Georgia location of Plum Nelly reached over a winding two-lane road. People would refer to it as “plum outa Tennessee and nelly outa Georgia.” Today Plum Nelly also the name of a well-known Appalachian folk art center.

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**Opposite page, above:** Gilmer County in the Ridge and Valley Region is Georgia's "Apple Capital." **Opposite page, below:** Ten miles northeast of Dalton is Prater's Mill, built in 1855. **Left:** Shinbone Valley in Chattooga County is one of the many valleys in this region. **Above:** There are more than seventy carpet manufacturing plants in Dalton. Pictured is Shaw Industries.





## The Blue Ridge Region

The Blue Ridge region of Georgia is known for its rugged beauty. Located in the northeastern part of the state, it is part of the Appalachian Highlands that stretch from New York to Alabama. The Blue Ridge region is a hundred miles wide and has an area of about two thousand square miles. The highest and largest group of mountains in

Georgia is in this region. These mountains are important to the rest of the state because they are the first barrier to warm, moist air rising from the Gulf of Mexico. When that air makes contact with the high mountains, it cools. The **precipitation** (rain, hail, sleet, or snow) that results provides water for the entire state. Here, precipitation can exceed 80 inches per year.

The region has a mixture of sandy loam (a blend of clay, sand, and organic matter) and clay. The shallow soil is easily eroded, and the steep slopes add to the erosion problems in the region. The area is well suited for hardwood forests, vegetable farming, and apples.

Brasstown Bald, the highest peak in the state, is located in this region. (In the South, high mountains that are treeless on top are often called “balds.”) The peak is almost 5,000 feet high. If you climb to the top of the observation tower there, you can catch a glimpse of three surrounding states: North Carolina, South Carolina, and Tennessee.

The Ridge and Valley region marks the beginning of the Appalachian Trail at Springer Mountain, northeast of Dahlonega. Every year, outdoor adventurers begin the 2,144-mile hike, hoping to arrive at its end in Maine.



**Above:** Springer Mountain marks the southern end of the 2,015-mile Appalachian Trail.

**Above right:** Markers like these guide hikers along the Trail. **Right:** Northeast Georgia's Blue Ridge Mountains draw visitors from all around the world. **Opposite page, above:** Helen's alpine village is a favorite tourist stop. **Opposite page, below:** The observation tower atop Brasstown Bald offers a 360-degree vista of North Georgia and neighboring states.



Travelers to this region can also visit other well-known Georgia landmarks including beautiful Amicalola Falls, which drops 729 feet; the 1,000-foot-deep Tallulah Gorge in Rabun County; and the alpine community of Helen in White County. In addition, this region is known for its many recreational opportunities.

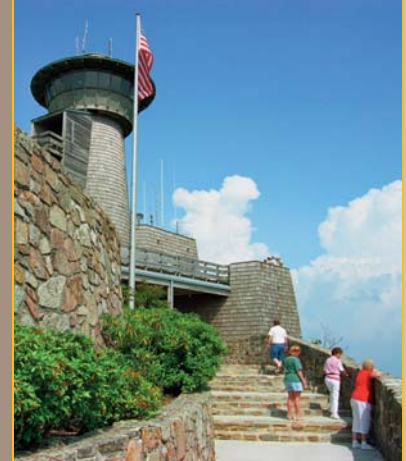
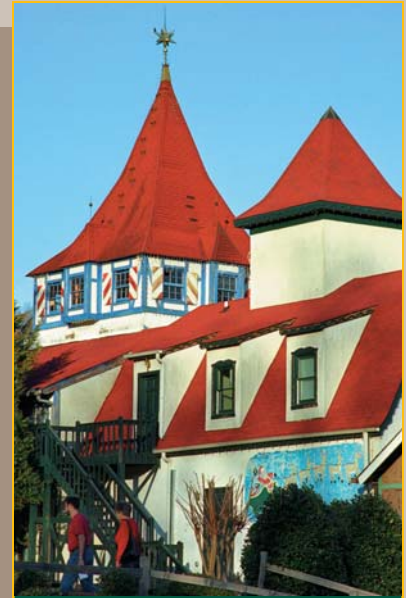
Georgia's three northern regions are all part of the Appalachian Mountains. The story of the Appalachians began over 900 million years ago when the continents collided and created one giant continent. This collision also created the Appalachians. Over millions of years, the continents split apart and slowly moved away from each other. The first Appalachian Mountains eroded into what later became the Atlantic Ocean.

About 500 million years ago, the continents once again began to move back together. As the continents moved together, they pushed the sediment from the ocean floor back up and created the second Appalachian Mountains. Once again, the continents collided. The force of the collision caused Earth's crust to fold and more mountains to form. Each time the continents collided and formed more mountains, the existing mountains were pushed further west. That is why the Appalachians have several sets of parallel ridges.

About 200 million years ago, the continents began to drift apart again. Over the past 200 million years, the Appalachian Mountains have eroded from their original height. At times ice glaciers covered the mountain chain. The weight of the glaciers pushed down the mountains underneath. The ice carved valleys and pushed the eroded rock sediments as far south as the southeastern corner of the United States.

## Did You Know?

Before **one hundred million** years of erosion wore away the **Blue Ridge Mountains**, they were **75 percent taller** than they are today.





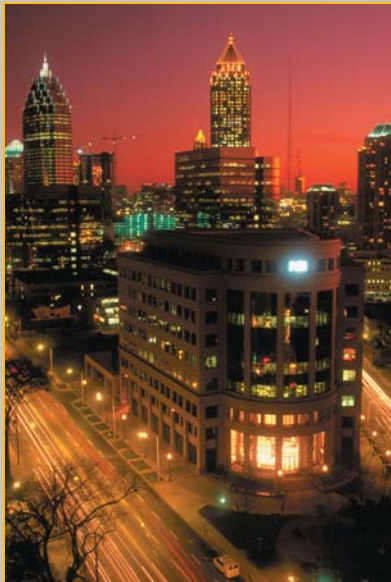


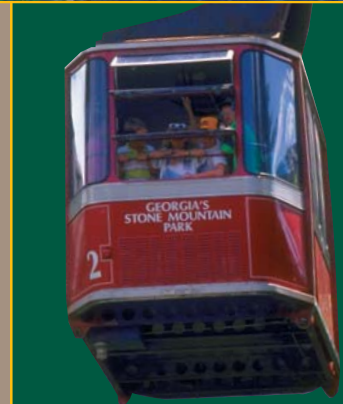
## The Piedmont Plateau

The Piedmont Plateau begins in the mountain foothills of northern Georgia and goes to the central part of the state. It has gently sloping hills and valleys in the north and flatlands in the south. The region has well-drained soils, primarily sandy loam and clay, which are suitable for hardwood timber, pine, and agriculture.

Some Georgians refer to the gently rolling hills and southern flatlands as the “heartland” of the state. The term *Piedmont* means “foot of the mountain,” but the plateau is so long that it actually runs from Alabama northward to Delaware. This granite-based landform makes up about one-third of the state’s land area. In addition to the granite base, there is another familiar type of soil: clay. People new to the region often seem perplexed after a heavy rain and ask, “What is that red stuff?” Long-term residents usually simply smile and respond, “Well, that is our famous Georgia red clay.”

About one-half of the state’s population lives in the Piedmont region. It was the cotton belt during the period before the Civil War. Today, it is known for the production of wheat, soybeans, corn, poultry, and cattle. Business and industry also flourish throughout the area. The cities of Atlanta, Athens, Madison, and Milledgeville are among some of the densely populated areas crisscrossed by the Chattahoochee, Flint, Ocmulgee, and Oconee rivers.





**Top:** Stone Mountain is the world's largest mass of exposed granite, which underlies much of this region. **Above:** This gondola takes visitors to the top of Stone Mountain. **Right:** The region is characterized by gently rolling hills. **Opposite page, above:** Atlanta is the region's, and the state's, largest city. **Opposite page, below:** Erosion often exposes Georgia's famous red clay.



**Above:** This monument at the Early County Courthouse in Blakely honors the importance of the peanut to the area's economy. **Below:** Georgia poet Sidney Lanier was inspired to write "The Marshes of Glynn" after visiting the marshlands near Brunswick. **Opposite page, above:** The Inner Coastal Plain is the major agricultural region of the state.



## The Coastal Plain

The Coastal Plain, which occupies about three-fifths of the state, is the largest region. There are actually two parts of Georgia's Coastal Plain: the Inner Coastal Plain and the Outer Coastal Plain. The Inner Coastal Plain has a mild climate and a good supply of underground water.

It is the major agricultural region of the state, with soil that varies from limestone to clay. The Vidalia Upland has become world famous for the unique sweet onions that grow there. The southwestern corner around Bainbridge and Albany is called the Dougherty Plain, in whose rich soil grow peanuts, corn, and pecan trees.

The Outer Coastal Plain does not have drained soil to provide fertile farmlands, but it is the center of naval stores and pulp production in the state. As you travel along the flat coastline area, which in some places

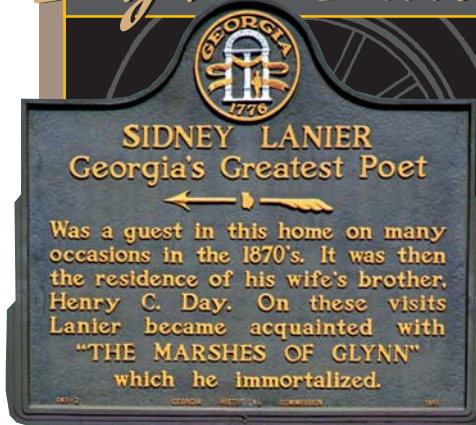
## Did You Know?

Living on the **Outer Coastal Plain** does have one unique disadvantage—**sand gnats**. When the elements are just right, these **tiny nuisances** love flying around your hair and face, and they can **bite**. But there is a cure—take a fresh **clothes dryer sheet** and rub it on your hair and face. It works to **keep those pests away**.





## *By the Side of the Road*



One of Georgia's most well-known and best-loved writers is poet Sidney Lanier. Born in Macon, Lanier often visited Brunswick and enjoyed the quiet beauty of the marshes that separated the Glynn County city from the barrier islands of Jekyll and St. Simons. To find out who he visited and how the marshes affected him, read the Historical Marker.

Want to see more? You can visit the Lanier Cottage in Macon where he was born. There you will see the desk where he worked, along with many personal items belonging to the poet. And, if you drive to Lakeland through Lanier County in southwest Georgia, you can learn even more about his life. Lanier will be discussed in greater detail later in your textbook. Watch for him!

## Map 5 Georgia's Barrier Islands

**Map Skill:** How many barrier islands does Georgia have?

**Right:** Sapelo Island's coastal salt marshes are a nursery for fish and shellfish.

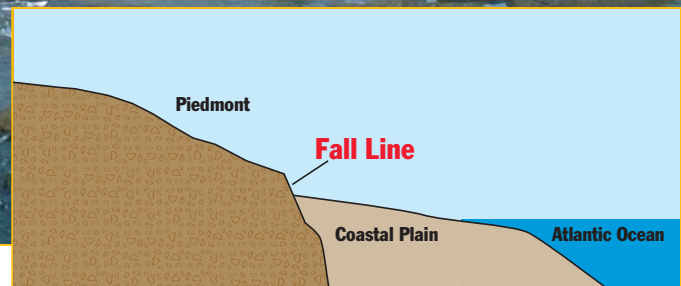
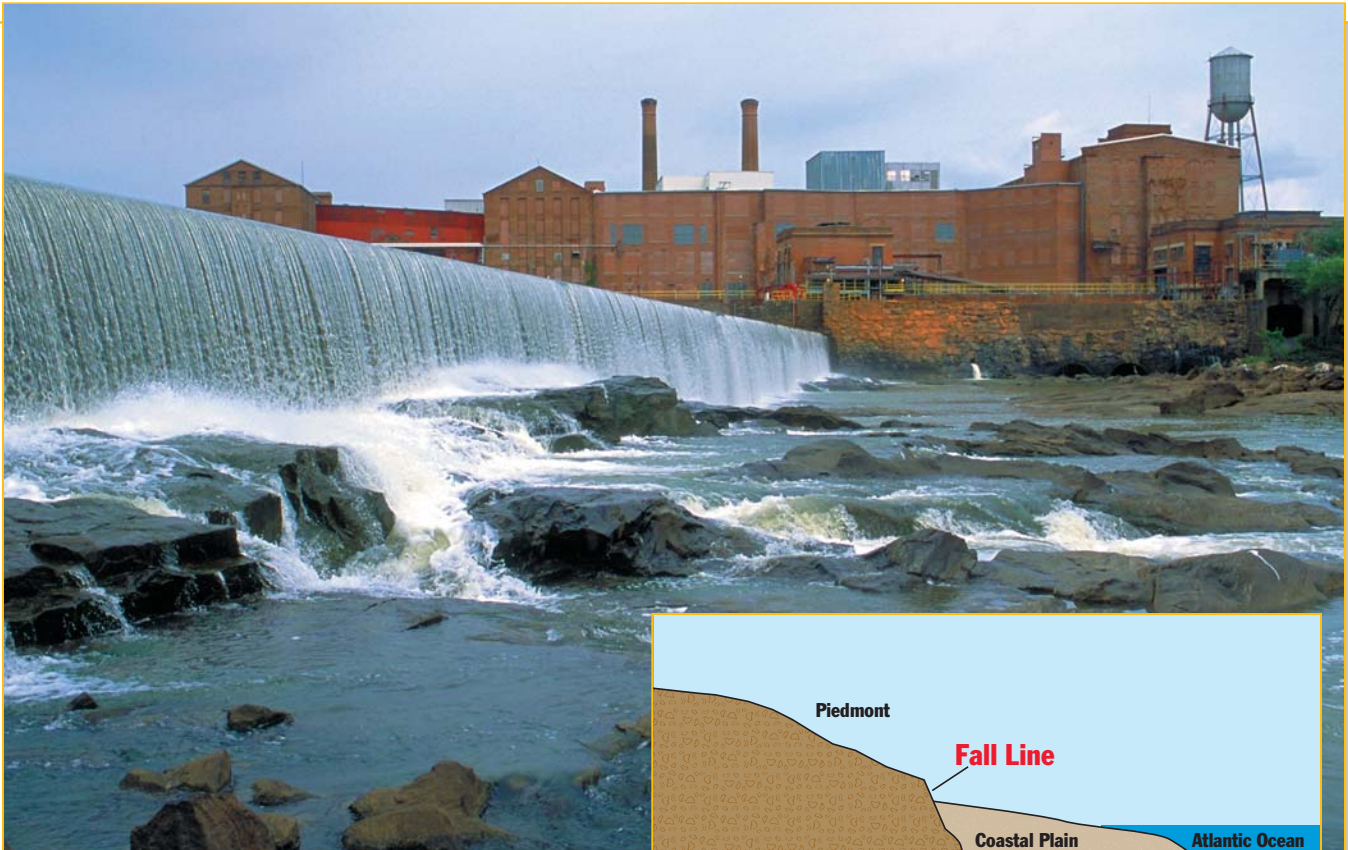


is fairly swampy and marshy, you are in the territory first visited by early explorers. One of the major features of the Outer Coastal Plain is the 681-square-mile Okefenokee Swamp located south of Waycross. The Okefenokee, the largest swamp in North America, is a freshwater wetland. A **wetland** is a low-lying land area where water lies close to the surface creating sloughs, swamps, bogs, ponds, and freshwater marshes. A wetland can also be a lowland that is influenced by tidal water flows to create salt marshes. Georgia ranks fourth in the nation in the number of acres of wetlands found in the state.

Along the coast, the deep harbors and barrier islands offer recreational facilities, seafood gathering and processing industries, and major shipyard ports. Here, for example, are cities such as Savannah, Darien, and Brunswick with their enduring, genteel beauty.

The coast is an interlocking chain of marshes, rivers, and tributaries that eventually flow into the Atlantic Ocean. The Spanish explorers called this subtropical region "Islands of Gold." Along the one-hundred mile shoreline is a group of **barrier islands**, so called because they protect the beaches by blocking much of the wind, sands, and water that could erode the mainland. Even today, this chain of islands offers much in terms of beauty, recreation, and tourism. Jekyll Island is primarily a state park, and Cumberland Island is a national seashore. Perhaps the greatest legacy of the barrier island group is that two-thirds of the land remains wilderness sanctuaries.

The **continental shelf** is the portion of the continent or the coastal plain that extends into the ocean. The continental shelf's outer edge, called the *continental slope*, drops away gradually. The continental slope is the actual edge of the continent. It falls into deep plateaus and eventually into the ocean depths two miles down.



## The Fall Line

The Coastal Plain region is separated from the Piedmont Plateau by a natural boundary known as the Fall Line. The **Fall Line** is the point at which hilly or mountainous lands meet the coastal plain. This line runs from Columbus on the western side of the state, through Macon and into Augusta on the eastern side. Other cities located on the Fall Line are Milledgeville, Roberta, Thomson, and Warrenton. Rivers and creeks flowing from the rocky hill country cut deep channels in the softer soil of the plains. This drops the elevation and creates waterfalls. As early settlers began to leave the coastal regions and explore inland, many were forced to stop at the Fall Line because they could not travel over the steep and rushing falls. These early settlers, as well as Indians and traders, found the waterfalls an excellent power source and built settlements there.

## Map 6 The Fall Line

**Map Skill:** Rivers above the fall line are fast moving, while rivers below the Fall Line are slower moving. Why do you think that is so?

**Above:** Fall Line waterfalls provide a source of power for businesses located along the Fall Line, including this textile mill in Columbus.

## It's Your Turn

1. What are Georgia's five physiographic regions?
2. Which are Georgia's largest and smallest regions?
3. What is the difference between the Inner Coastal Plain and the Outer Coastal Plain?
4. What is the Fall Line and why is it important?
5. What are some of the cities located along the Fall Line?

## Section Preview

**As you read, look for:**

- the difference between weather and climate,
- the effect of weather conditions on the state,
- different types of weather phenomena, and
- **vocabulary terms:** climate, weather, vertical climate, drought, wind current, trade winds, prevailing westerlies, ocean currents, hurricane, nor'easter, tornado, El Niño, La Niña, and global warming.

**Below:** Snowfall is rare in Atlanta. This photograph was taken at Piedmont Park.

## Georgia's Climate

One of the most distinguishing characteristics of Georgia's geographic regions is the climate of each area. But, what does that really mean? **Climate** refers to the type of weather a region experiences over a long period of time. **Weather** refers to the day-to-day conditions and changes in the atmosphere. While weather varies constantly, a region's climate remains stable. The climate of an region influences the types of homes built, the types of industries that develop, the clothing styles, and even what crops are grown. Weather extremes can produce devastating results—destruction of property and the environment, injuries, and deaths.

Look out of a window for a minute. What do you see? If the leaves are turning red, orange, and gold, it is probably fall regardless of which region you call home. However, the weather outside can differ tremendously based on where you are located. For example, in the north Georgia mountains, those beautiful autumn leaves indicate that snow is just around the corner. In south Georgia, however, fall leaves are an indicator to keep the umbrella handy as residents hope that hurricane season is finally ending and they can prepare for a dry month.



## Temperature

As a result of Georgia's latitude and longitude (and our nearness to the equator), the climate in our state overall is mild with a subtropical feel along the coast. We experience four distinct seasons: spring, summer, fall, and winter. In most places, summers are hot and humid while winters are mild. However, there is a narrow band across the north Georgia mountains that has warm summers and moderately cold winters because mountainous terrain also influences temperature. The higher the elevation, the colder the temperature. This phenomenon is sometimes referred to as **vertical climate**.

The highest temperatures in the state usually occur in July, and the coldest readings are normally in January. The average temperature for the year is 65°F (Fahrenheit). However, the mercury can fall below 0°F in the northern sections and rise above 100°F in the middle and southern regions of the state.

Several unlikely records have been set in the state. For example, on July 24, 1952, the town of Louisville had a temperature of 112°F. At the other end of the scale, Floyd County shivered on January 27, 1940, when the temperature plunged to -17°F.

Generally, though, temperatures are relatively comfortable through most of the year, which is one of the reasons why so many companies move into our state. Industries tend to favor mild climates because such weather equals lower costs for heating and air conditioning and fewer weather-related absences. Equally important, our mild climate generates longer growing seasons for a variety of crops. Even in today's modern Georgia, one in six Georgia jobs relates to agriculture or agri-business.

## Precipitation

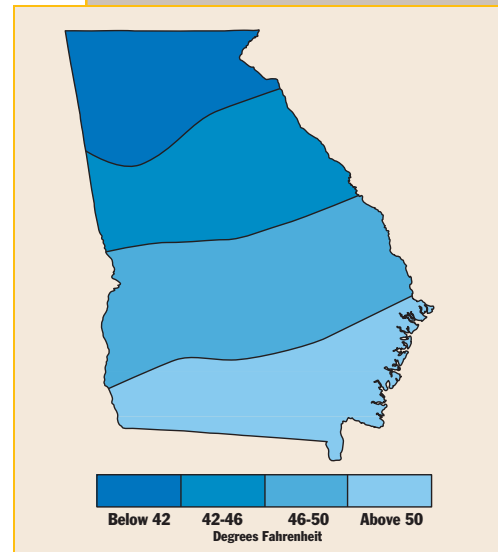
Precipitation is vital to Georgia's economy. Snow, which generally falls only in the mountain regions, melts and runs off into streams and lakes. Rainfall aids the growth of crops and forests. In a normal year, Georgia receives an average of 40 to 52 inches of rain in central and southern regions and 65 to 76 inches in the northern mountains, some of which is in the form of snow. July is the wettest

month of the year, and October is the driest. Interestingly enough, all five areas of Georgia, including the Outer Coastal Plain, have experienced ice or snow, so a snow day from school really can happen even in Savannah, Brunswick, or the St. Marys area.

From 1998 through 2002, Georgia, like many other parts of the country, experienced a severe drought, with rainfall far below average. A **drought**

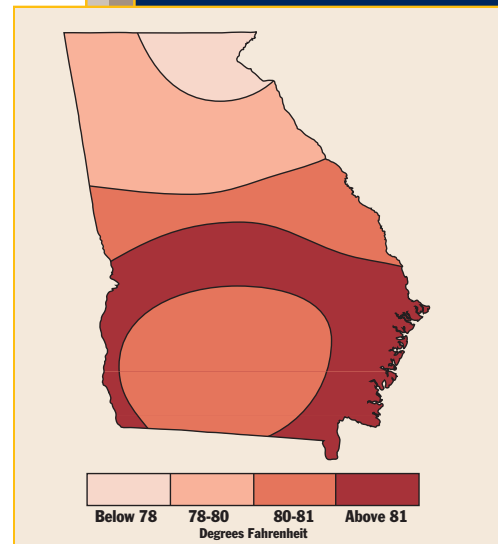
### Did You Know?

According to weather observers, if birds fly for cover when it starts raining, the rain will only last for a short time. But if they start flying around as usual in the rain, forget about the family picnic.



### Map 7 Average January Temperatures

**Map Skill:** What is the January temperature for where you live?



### Map 8 Average July Temperatures

**Map Skill:** What is the July temperature for the area where you live?



# Spotlight on the Economy

## Droughts



**Droughts impact us environmentally,** socially, and economically. Businesses, industries, and home users are all affected by having less water. There is not as much water available to produce hydroelectric power. Forest fires become a constant threat, especially in heavily wooded areas of the state. Shortages of rainfall also mean fewer water-related recreational opportunities. Conservation becomes very important. But the most damaging impact of prolonged droughts is on agriculture.

Droughts limit agricultural production, so there is less harvest to sell to farmers' markets, food production companies, and grocery stores. Droughts also mean less grain for livestock. This affects beef, dairy, and poultry farms. Production goes down and prices go up. Everyone pays for the drought when they check out at their local supermarket.

To Georgia's economy, rain means more than carrying an umbrella. Snow means much more than a day out of school for students. Rain and snow mean economic survival. Sometimes, however, too much of a good thing can be trouble-

**Above:** Even irrigation equipment cannot help farmers' crops when a drought strikes.

some. In 1994, for example, all Georgia precipitation records were broken in most of the region from Bainbridge to Macon as over 23 inches of rain fell within a week's time. Thirty-two counties were declared disaster areas by the federal government. Officials in Albany, one of the hardest-hit areas, had to find shelter and food for 15,000 people. In Macon, 150,000 people were without water, while the town of Montezuma was virtually under water. Caring people along with various state and federal governmental agencies came to the aid of these Georgia citizens, many of whom lost everything they had worked so hard to attain.

Precipitation is also good or bad depending on the timing of the rains. The very rainfall that helped Georgia pull out of a five-year drought in 2003 also arrived a bit earlier than scheduled and damaged several major Georgia crops including watermelon production.

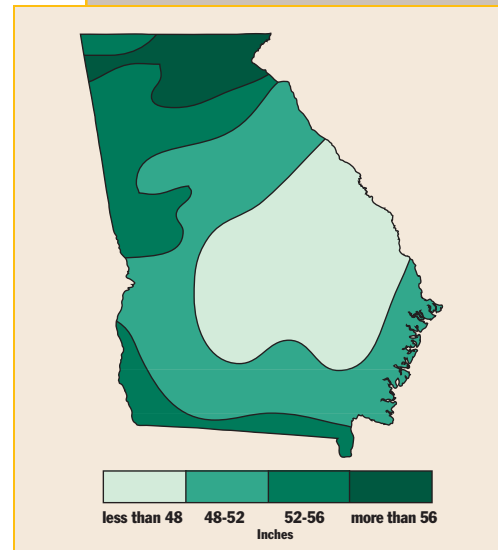
is a lack of precipitation over a period of time that results in water shortages. Lack of rainfall for even a short period of time can harm industries, farmers, and homeowners alike. A few weeks without rain and lawns begin to turn brown, plants and shrubs shrivel, fire warnings become common, and water conservation actions run full speed. The most famous drought in U.S. history may be the 1930s Dust Bowl when 50,000,000 acres of land became useless for farming and ranching. In the late 1980s, the country suffered the worst drought in 50 years, affecting at least 35 states. Crops and livestock died, some farm areas became deserts, and forest fires destroyed over 4,100,000 acres in 1988 alone. Half of Yellowstone National Park was charred.

## Wind and Water Currents

When we think of Georgia and water, we certainly think of our coastline on the Atlantic Ocean. We know that the Atlantic has an influence on our state. But we often do not think about the influence the Gulf of Mexico has on Georgia since the Gulf is not directly on our border. Both have a strong influence on Georgia because of winds, wind currents, and ocean currents.

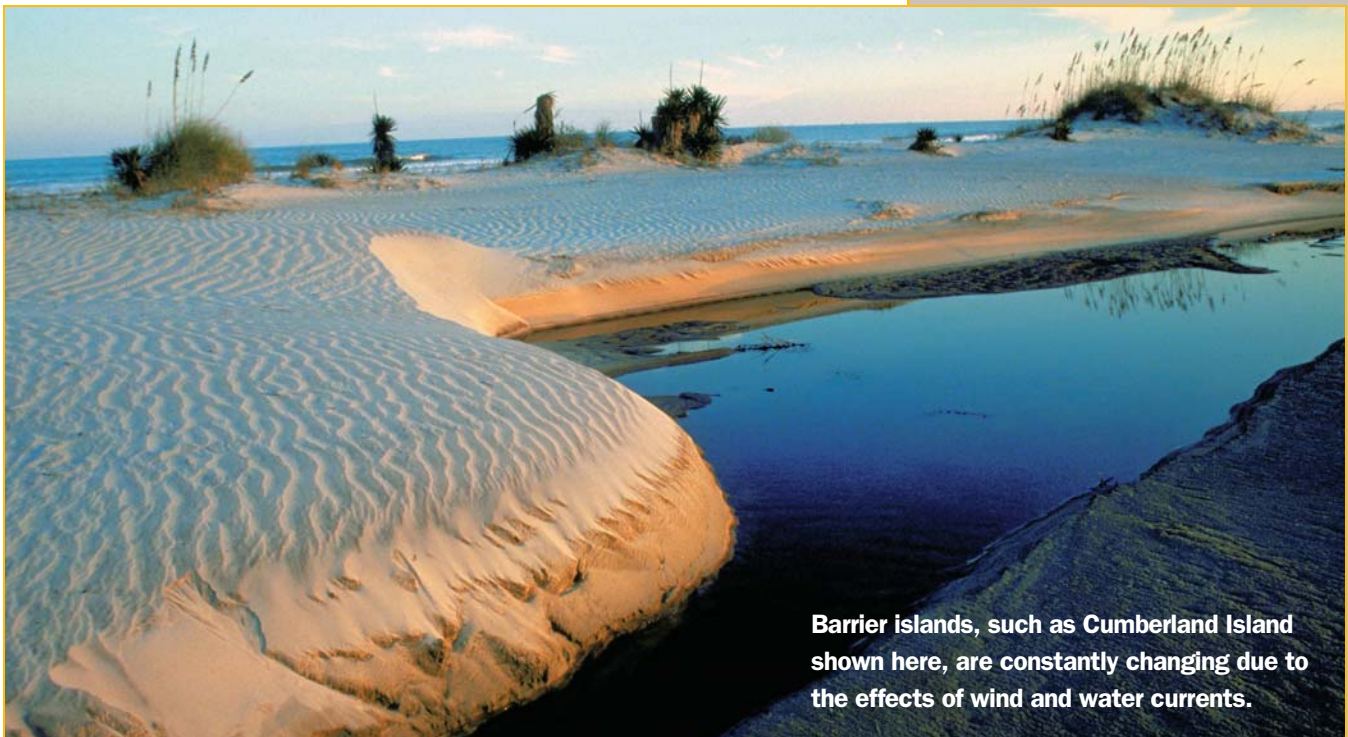
### Winds

Winds influence the overall weather pattern of Georgia. Air masses that begin over the Gulf of Mexico and the Atlantic Ocean control summer's warm months. The winter months are controlled by air masses that start in the polar regions of Alaska and Canada. Wind patterns can bring moderate weather or intense storms in the forms of tornadoes and hurricanes.



## Map 9 Average Annual Precipitation

**Map Skill:** What is the annual precipitation for the area in which you live?



Barrier islands, such as Cumberland Island shown here, are constantly changing due to the effects of wind and water currents.



## Wind Currents

The early explorers who traveled to Georgia and the rest of the southeastern area sought favorable wind currents to shorten their trip and to make for smoother sailing. A **wind current** is a continuous movement or flow of air. Surface winds from the equator to around 30° south latitude flow from the southeast. Winds from the equator to around 30° north latitude generally flow from the northeast. These winds are known as **trade winds**. The early navigators used the trade winds to sail westward to the New World.

Winds from around 30° to 60° latitude north and south of the equator generally blow from the west to the east. These winds, often called **prevailing westerlies**, were the winds used by explorers on their homebound trips, usually traveling a route slightly north of the trade winds.

These areas are known as the *middle latitudes* and are prone to produce cyclones, which can bring winds from any direction as they pass. These westerly winds carry storms across the Atlantic, creating dangerous gales and heavy winds that are severe hazards to shipping.

The wind currents were important to early explorers visiting Georgia because they allowed ships to travel to the New World with settlers and with the supplies the colonists needed. They also allowed ships to travel from the New World back across the Atlantic carrying goods produced in the colonies.

## Ocean Currents

About 71 percent of Earth is covered with water. Most of that water is in the oceans—the Atlantic, the Pacific, the Indian, the Arctic, and the Antarctic. The water in these oceans is constantly moving, and some of this movement forms rivers in the ocean. *Oceanographers* (scientists who study oceans) call these rivers of ocean water **ocean currents**. Strong ocean currents, especially the Canary Current and the Atlantic Equatorial Current, combined with the trade winds to push the explorers' ships south and west to the New World. On their homeward voyage, the ships were pushed to the east by the Gulf Stream.

Ocean currents are caused by the uneven heating of Earth's surface by the sun. Earth is hottest at the equator, where the sun shines most directly on Earth. Earth is coldest at the poles, where the sun shines less directly. Ocean

### Map 10 Wind Currents

**Map Skill:** In which direction do the trade winds blow?

currents contribute to the movement of heat from the equator to the poles, thus helping equalize Earth's surface temperatures. Ocean currents affect not only the routes chosen by ships carrying people and goods across the sea to the New World; they also influence climate and living conditions for the plants and animals on land.

## Weather Phenomena

As you have already discovered, most of the time Georgia's climate is predictable—a few snow days from Atlanta and Athens northward in the winter, afternoon thunder showers and hot, hazy summer days in the coastal areas. However, there are also some unpredictable climate phenomena that occur with regularity in our state.

## Hurricanes

**Hurricanes** are spawned when waters of 80°F or more transform the heat energy of tropical waters into strong winds and heavy waves. In our section of the world, the beginnings of these storms occur off the coast of Africa as depressions. It may take several weeks for a depression to turn into a tropical storm and eventually a hurricane.

The term *hurricane* comes from the Spanish word *huracan*, which means "big wind" and which was derived from the Indian word *huracan*, a reference to the evil spirit of storms. The season for these fierce storms is from the beginning of June to the end of November, and their devastation can be frightening. The devastation results from both wind and storm surge. The movement of water inland from coastlines, tidal rivers, and marsh areas can be as damaging as the fierce winds.

Georgia's most damaging hurricane-like storm in terms of loss of life came ashore in Savannah on August 27, 1893. Although the winds were not strong, 1,000 people died from flying debris and other storm-related causes. At that time, there were no reliable weather alerts for hurricanes, save word of mouth. Many people were simply unaware and



## Map 11 Ocean Currents

**Map Skill:** What current runs along the east coast of North America?

## Did You Know?

The **costliest hurricane** to hit the East Coast was **Hurricane Andrew** in 1992, which hit land in **Dade County, Florida**. Damages from this **Category Four** hurricane were over **\$25 billion**.



## Map 12 Hurricane Paths

**Map Skill:** What area appears to be the most active for hurricanes?

unprepared for the 72-mile-per-hour storm.

Hurricane strength is registered on a score from one to five. A Category One hurricane has top winds of 74 to 95 miles an hour. A Category Five hurricane has winds of over 155 miles an hour and a water surge of more than 18 feet. Hurricanes are given names by the National Hurricane Center in Miami, Florida. The center usually chooses one name, either male or female from each letter of the alphabet, although occasionally a letter is skipped. Through years of experience, residents along the coast of the eastern United States have learned to pay close heed to tropical storm reports. The more you know about the various weather emergencies, the safer you and your family will be.

### Nor'easters

A **nor'easter** ("northeaster") has the look of a hurricane. But it is really a gale wind that blows from the northern Atlantic and is often accompanied by large amounts of rainfall. Between October and April, areas of low pressure develop off the East Coast. The storm picks up warm air and moisture from the relatively warm Atlantic Ocean water. Strong northeast winds blow and pull the storm north along the Atlantic coast. At the same time, those northeast winds move cold air south. The combination of warm and cold air can produce a storm of snow, sleet, freezing rain, or heavy rains. When such storms move inland, they can produce rain or snow over coastal areas. The nor'easter is not, however, normally as strong or as devastating as a hurricane.

## Figure 2 Saffir-Simpson Hurricane Scale

Scale Number or Class	1	2	3	4	5
Wind Speeds (miles per hour)	74–95	96–110	111–130	131–155	Over 155
Storm Surge in Feet	4.0-4.9	5.0-7.9	8.0-11.9	12.0-18.0	Over 18.0
Expected Damage	Minimal	Moderate	Extensive	Extreme	Catastrophic

## Tornadoes

Although Oklahoma has the most tornadoes in the United States, Georgia also has these funnel-shaped whirlwinds. When we see action movies or read about the excitement of storm chasers, we sometimes forget that these are dangerous, life-threatening cyclones. The word **tornado** comes from the Spanish word *tronada*, which means “thunderstorm.” When warm, moist air mixes with a rapidly moving cold front, severe thunderstorms are possible. In the southeastern United States, these storms can produce tornadoes. Tornadoes are swirling cyclonic winds that, in our hemisphere, move in from southwest to northeast and spin in a counterclockwise motion. As the spinning increases, a column works itself down from the clouds. As it touches the ground, the tornado literally pulls debris up into the air.

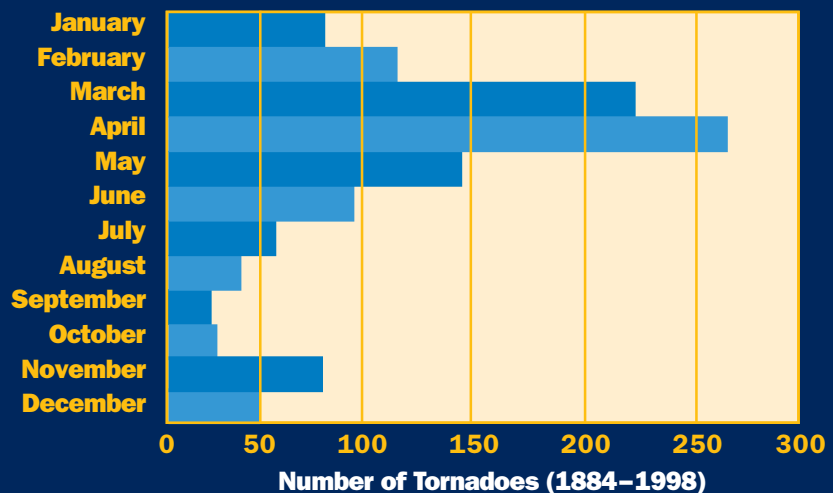
Georgia has an average of twenty-one tornadoes a year, resulting in one to three deaths. Most tornadoes occur from March to May, but they can happen in any month. A tornado can last for a few minutes and travel as little as one-half mile with wind speeds up to 100 miles per hour. Larger tornadoes, called *maxis*, may travel over 200 miles during a three-hour period, with wind speeds of a shattering 250 miles per hour.

Tornadoes can cause extensive property damage, injuries, and loss of life. And they are unpredictable. Both large and small tornadoes seem to have minds of their own. They can move in a straight line, loop, hop over places, and even double-back on themselves. If you have seen pictures of damage after a tornado, you know that a line of houses can be totally crushed—with the single exception of one house in the middle of the storm path that



**Above:** When tornadoes touch down, the destruction can be horrific.

**Figure 3 Tornadoes in Georgia (1884–1998)**



**Figure 4 Fujita Intensity Scale for Tornadoes**

Rating	Wind Speeds (mph)	Expected Damage
F-0	40–72	Light: Loose Debris
F-1	73–112	Moderate: Broken Windows and Doors
F-2	113–157	Considerable: Trees Broken
F-3	158–206	Severe: Outer Walls Collapse
F-4	207–260	Devastating: Structural Damage
F-5	261–318	Incredible

## Figure 5 What to Do During a Tornado

Because of the danger of tornadoes, it is important to know what to do if there is a tornado “warning.” Schools practice tornado alerts each year, but what if you are home alone? Sometimes the sky will turn a dark green shade or large hail will begin to fall.

1. Stay away from windows.
2. Seek a safe shelter immediately. A basement is best or move to an interior room of your home. If necessary, wait out the storm in an interior bathroom (the plumbing helps strengthen walls).
3. If you hear a loud noise that sounds like a train, seek cover under a table, put a mattress over your head, or get inside the bathtub or shower and wait until the storm has passed and the sky brightens again.

stands without so much as a cracked window.

Georgia’s most devastating tornado came on April 6, 1939, when a tornado touched down at 8:27 a.m. in Gainesville and Hall County. Over two hundred people were killed and over sixteen hundred were injured in that storm; much of downtown Gainesville was destroyed.

## Changes in Weather Patterns

Much research is being conducted to determine how El Niño and La Niña affect Georgia’s weather patterns. **El Niño**, which means “Little Boy,” is warmer-than-normal Pacific Ocean surface temperatures. **La Niña**,

which means “Little Girl,” is colder-than-normal Pacific Ocean surface temperatures. El Niño seems to occur unusually strongly about once a decade, usually in December before Christmas. Both El Niño and La Niña bring climate havoc. For example, in the early 1980s, El Niño was 7°C (Celsius) warmer than normal and pumped heat energy into the atmosphere, altering weather patterns across three-fourths of the globe. There was flooding in North and South America and droughts in Africa, South Asia, and Australia.

Another phenomena influencing Georgia’s climate is global warming.

**Global warming** is the term that describes the raising of the average temperature on Earth due to an excess of carbon dioxide in the atmosphere. Researchers are finding rising temperatures and precipitation increases resulting from global warming.

### A Final Note

Regardless of where you live in Georgia, people always talk about the weather. It is either too hot or too cold, too rainy or too dry. The next time you are tempted to complain, think about life in Antarctica. The coldest temperature is -126.0°F. An average summer day is 1°F. The average daily temperature of the six-month winter is -70°F. It’s something to think about!

## It's Your Turn

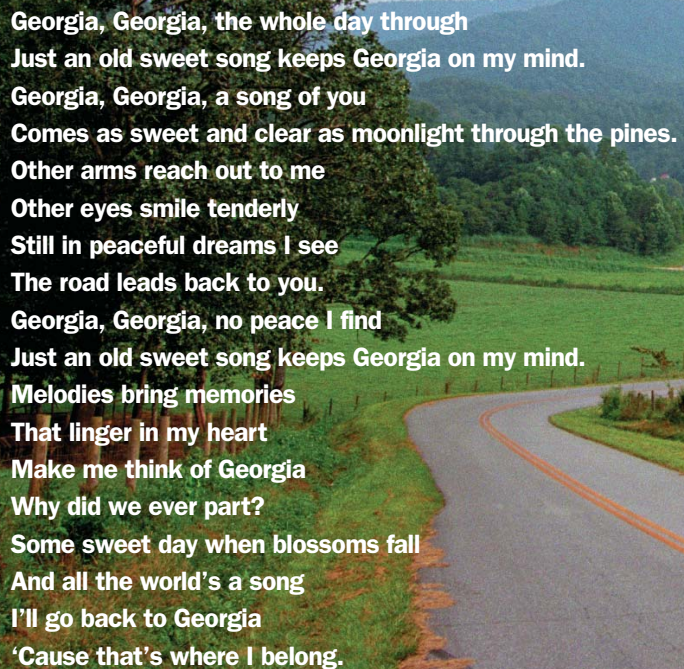
1. Why is Georgia’s climate relatively mild?
2. Define the term *drought*.
3. Why is Georgia’s limited annual snowfall so important?
4. How did wind and ocean currents influence the settlement of the New World?
5. Where do Atlantic coast hurricanes originate?
6. What is the difference between El Niño and La Niña?

# Chapter Summary

- Geography helps us understand the world in spatial terms, places and regions, Earth's physical systems, the human systems of Earth, and environment and society.
- Latitude and longitude are used to locate a specific place on Earth. Georgia's absolute location on the globe is between 31°21' and 35° N latitude and between 80°50' and 80°36' W longitude.
- Georgia borders five other states—Florida, Alabama, Tennessee, South Carolina, and North Carolina—and it has 100 miles of coastline on the Atlantic Ocean.
- Georgia is the largest state east of the Mississippi River. It includes 58,910 square miles of land and 854 square miles of inland water.
- The geographic center of the state is located in rural Twiggs County, 18 miles southeast of Macon.
- Georgia's lowest point is sea level on the Atlantic coastline; the highest point is Brasstown Bald in Towns County with an elevation of 4,784 feet.
- Georgia contains five major physiographic regions: Appalachian Plateau region, Blue Ridge region, Ridge and Valley region, Piedmont Plateau, and Coastal Plain.
- A Fall Line crosses the state, separating the coastal plain from the hilly or mountainous areas.
- Georgia's average annual temperature is 65°F.
- Georgia's rainfall averages 40 to 52 inches in the central and southern parts of the state and 65 to 76 inches in the northern mountains.
- Wind currents, including trade winds and prevailing westerlies, provided power for early explorers to sail to the New World and return to homes across the Atlantic.
- Ocean currents also helped early explorers travel to the New World. In addition, they help stabilize Earth's temperature by moving heat from the equator to the North and South Poles.
- Georgia experiences such weather phenomena as hurricanes, nor'easters, and tornadoes.

## Of Special Interest

### The Official State Song of Georgia



Georgia, Georgia, the whole day through  
Just an old sweet song keeps Georgia on my mind.  
Georgia, Georgia, a song of you  
Comes as sweet and clear as moonlight through the pines.  
Other arms reach out to me  
Other eyes smile tenderly  
Still in peaceful dreams I see  
The road leads back to you.  
Georgia, Georgia, no peace I find  
Just an old sweet song keeps Georgia on my mind.  
Melodies bring memories  
That linger in my heart  
Make me think of Georgia  
Why did we ever part?  
Some sweet day when blossoms fall  
And all the world's a song  
I'll go back to Georgia  
'Cause that's where I belong.

Source: "Georgia on My Mind" by Hoagy Carmichael and Stuart Gorrell Copyright © 1930 by Peermusic III, Lt. Copyright © Renewed. Used by Permission. All Rights Reserved.



# Chapter Review

## Reviewing People, Places, and Terms



Define, identify, or explain the importance of each of the following as it relates to this state we call home.

1. absolute location
2. hemisphere
3. longitude
4. bald
5. geography
6. responsibility

## Understanding the Facts



1. Which of Georgia's surrounding states touch only two other states?
2. Identify one way each of the state's five physiographic regions is unique.
3. What is the difference between the Inner Coastal Plain and the Outer Coastal Plain?
4. What are the barrier islands, and what purposes do they serve?
5. What do weather and climate have in common? In what ways are they different?
6. How do ocean currents help equalize Earth's temperature? Why is that necessary?
7. How many tornadoes does Georgia average a year?
8. Using a Venn diagram, compare and contrast El Niño and La Niña.

## Developing Critical Thinking



1. Explain the different ways a prolonged drought can negatively impact the state's economy and its individual citizens.
2. In your opinion, which of the following Georgia regions is the most important to Georgia's agricultural economy—the Coastal Plain (Inner and Outer) or the Piedmont? Defend your choice.
3. Explain how wind and ocean currents influenced settlement in the New World.

## Checking It Out



1. Earthquakes in Georgia? Oh yes, and they occur more often than you know. Check out the when, where, and why using your research skills. While you are there, check out the 1811 New Madrid, Missouri, earthquake and see how it changed the Mississippi River.
2. Atlanta and Athens have also experienced some of a tornado's wrath. Use your research skills to find out more about these weather events. A clue to help you: the key phrase is "state of Georgia tornadoes." Also, check out what you need to do if you are in a car and see a tornado in the distance bearing down on you.
3. Research global warming and find one thing that you can do to help.
4. The United States has a "tornado alley." Identify the states in the alley and describe how your life might change if you lived there.

## Writing Across the Curriculum



1. The date is December 15th, and you are a weather forecaster living in Athens. Everyone wants to know if there will be snow during winter break. Research the average monthly temperature and the average monthly precipitation for Athens. Based on what you have learned in your text and your research, write your weather forecast.
2. Develop a home safety booklet for your family to use during tornado season.
3. Your local Chamber of Commerce has asked you to write a brief ad proclaiming your geographic region the best place to live. Based on what you have read thus far, write that ad.

## Exploring Technology



1. Using your favorite search engine on the Internet, look up the National Geography Standards. Decide which of the eighteen standards you think are the most important for young people to know. Explain your choices.
2. Check out the following statements to determine if they are true. Explain each.
  - a. In 10 minutes, a hurricane can release more energy than all of the world's nuclear weapons combined.
  - b. Lightning strikes about 6,000 times per minute on our planet.
3. There are all sorts of long-held folklore about the weather. Use the search words "weather folklore" to find three or four beliefs that you think are most interesting. Then determine through observations, interviews, or web searches if any of those beliefs are actually true.

## Applying Your Skills



1. Research one of the historical sites found in the region in which you live. Interview local residents about their knowledge of the site. Use local library or media center resources to find out more about the site.
2. Research your area's weather patterns. Graph the weather of your hometown or community over the period of one year. (Note, this information is available from the University of Georgia.) What is the average temperature of your community? What are the coldest and hottest months? What are the wettest and driest months? What is the record precipitation for your community? Has your community experienced any weather problems in the past five years? What impact did these problems have on the people and the economy? Share your findings in a report to your classmates.

## Just for Fun



You have heard the expression "It's raining cats and dogs." But did you know that it is possible? Research the expression to find out more.



## Photo Question

In which one of Georgia's geographic regions are peanuts a major crop?



# Georgia's Seven Wonders



**Okefenokee Swamp** (below) is the largest swamp in North America. Cypress trees (above) are known for their "knees," which help anchor them in unstable ground.

**I**f you have taken a world history class, you may remember reading about the "Seven Wonders of the World," which included the Hanging Gardens of Babylon, the Great Pyramid, and the Colossus of Rhodes. But what you might not realize is that our state also has its own "seven natural wonders."

As you know, climate affects the natural features of a state over the centuries. Winds and water have eroded and shaped the state's **topography** (physical features such as mountains or plateaus). Among the many natural features of Georgia's topography, seven have been designated as natural wonders: the Okefenokee Swamp, Tallulah Gorge, Radium Springs, Warm Springs, Stone Mountain, Providence Canyon, and Amicalola Falls.

The **Okefenokee Swamp**, which was once part of the Atlantic Ocean floor, received its name from the Indian word *o-wa-qua-phenoga*, which means "land



of the trembling earth.” The Okefenokee is filled with a shallow “black water” stained by the tannic acid of decaying vegetation. The swamp covers a half million acres (about seven hundred square miles) and is located in the Outer Coastal Plain near Waycross and Folkston. This primitive wetland is home to hundreds of species of plants, animals, and reptiles, many of whom are endangered. Throughout the area are about seventy “piney woods” islands, once home to Seminole Indians and settled by pioneer Georgians in the 1850s.

If you visit, you will enter a world of giant, 80-foot cypress trees draped with moss overhanging dark, murky waters filled with alligators, herons, egrets, and cranes. The swamp is also home to Georgia’s native black bears—and the comic strip character “Pogo.” So, if you like snakes, turtles, armadillos, otters, birds, deer, alligators, and frogs, take a guided trip on a tour boat and enjoy the sights and sounds. Oh, make sure you say hello to 15-foot, 900-pound “Oscar,” the alligator.

**Tallulah Gorge**, located on U.S. 441, spans the border between Habersham and Rabun counties. One of the most spectacular gorges in the eastern United States, Tallulah Gorge is 3 miles long and nearly 1,200 feet deep. The hard granite walls form steep cliffs. The roar of the waters that cut the gorge could once be heard for miles and led to the nickname the “Niagara Falls of the South.” Today the Tallulah River is silent because it was dammed to provide hydroelectric power for Atlanta’s continuing growth. Because of the dam, you can now vacation on manmade Lake Rabun or Lake Burton.

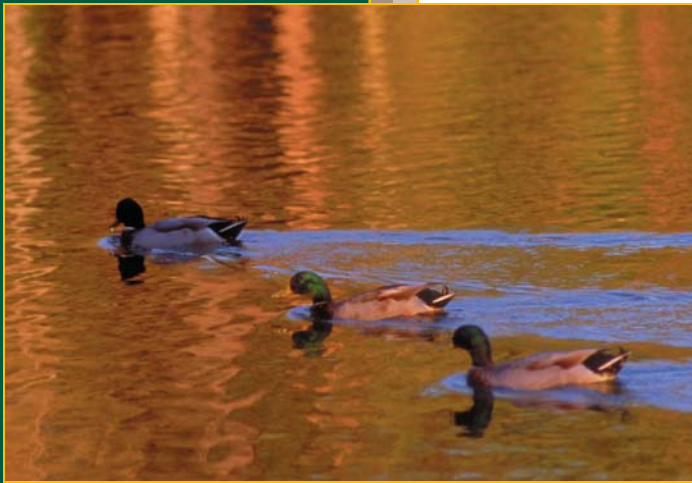
Tallulah Gorge reached national prominence several times. In 1886, “Professor Leon” tightwalked across the gorge; 84 years later, Karl Wallenda repeated that walk. Wallenda stopped twice in crossing the falls to stand on his head.

Today, visitors are returning to the area to enjoy the many displays at the Jane Hurt Yarn Interpretive Center or to shop for handmade mountain handi-crafts. Those who like hiking or mountain climbing can request special permission to practice those skills on the gorge.

**Radium Springs**, located near Albany in Lee County, is another of Georgia’s wonders. First opened in 1927 as a resort casino, the springs feature sapphire-blue water flowing through a crystalline pool. Indians believed that this water had healing powers. Today, Radium Springs has largely dried



**Above:** Spectacular vistas into Tallulah Gorge have drawn millions of visitors to this state park over the years.



**Top:** Franklin D. Roosevelt built this six-room cottage in Warm Springs. It later came to be called the “Little White House.” **Above:** FDR State Park in Warm Springs is one of the most beautiful of the state’s parks.

up due to drought and algae. But there are fourteen other “blue holes” and caves hundreds of feet below Albany courtesy of the Flint River. They provide the city with clear, purified 68° water.

Radium Springs is no longer in operation although there is interest in converting it to a state park. And there has been some interest in restoring the former casino. What do you think?

Another site close to Radium Springs is an area of sand dunes. If you look closely, you may find sharks’ teeth in the sand. Why? Many geologists believe that this area was the northern edge of the Gulf of Mexico millions of years ago. That is a wonder in itself.

In Meriwether County, near Pine Mountain, is one of Georgia’s most famous natural wonders—**Warm Springs**. The warm mineral springs flow from the hillsides of Pine Mountain. The temperature of the pools of mineral springs average 88°, and the springs flow at a rate of 914 gallons a minute. The Creek and Iroquois Indians brought their sick and wounded to the springs to be “healed,” much like those who visited Radium Springs.

Henry Clay and John C. Calhoun also visited the springs, but it was in 1924 that the area gained fame. Franklin Delano Roosevelt visited Warm Springs as treatment for his polio. The four-term president made so many trips to the



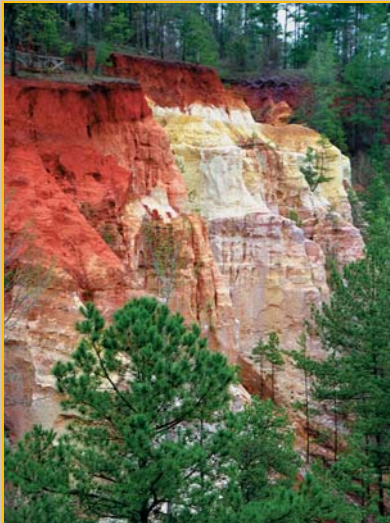
healing springs that he built a comfortable but small home there in 1932. It eventually became known as the “Little White House.” Today, the springs are part of a state rehabilitation center and are, along with nearby Callaway Gardens, a popular resort attraction.

Probably the best known of Georgia’s seven wonders is **Stone Mountain** near Atlanta. This solid granite mountain rises 750 feet above the Georgia Piedmont and is 1,683 feet above sea level. It began to form over 300 million years ago when molten magma was pushed into existing rock about 10 miles below the surface. The surrounding rock layers eroded slowly, and the granite mass was uncovered about 15 million years ago. The 25-million-square-foot, 583-acre rock was a sacred place for the Creek Indians who settled the area.

Stone Mountain may be best known for its Confederate Memorial Carving, which is the largest raised sculpture in the world. The carving is more than 400 feet above the ground, measures 90 by 190 feet, and is recessed 42 feet into the mountain. The figures are as tall as a 90-foot building. The carving dates to 1912 when the United Daughters of the Confederacy acquired the north face of the mountain for a Civil War monument. The carving depicts Confederate President Jefferson Davis, General Robert E. Lee, and



**Top:** Stone Mountain was once described as “very high, shining when the sun set like a fire.” **Above:** The Confederate Memorial Carving is larger than a football field.



Visitors to Providence Canyon (above and below) are amazed at the breathtaking colors exposed in the canyon walls.

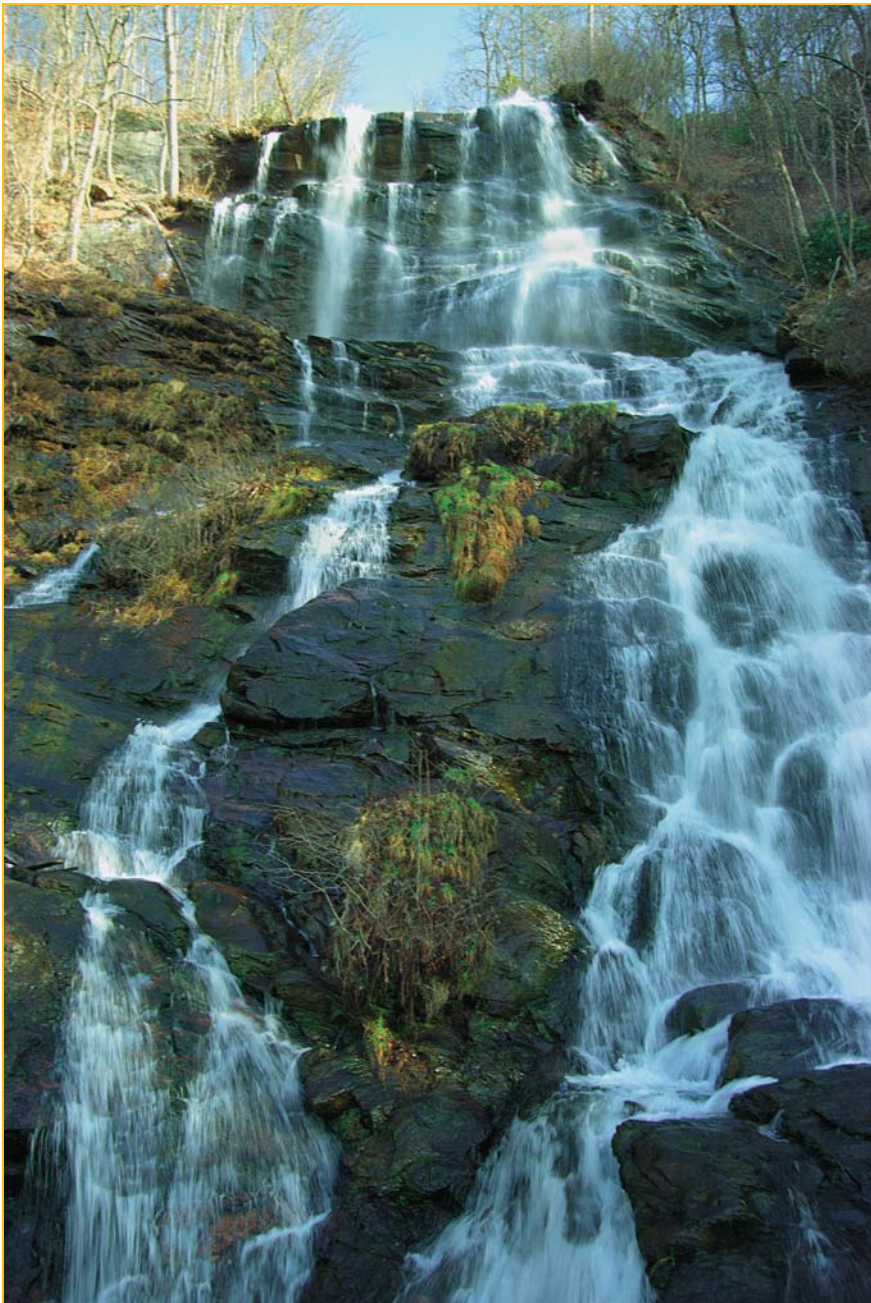
Thomas J. “Stonewall” Jackson. It was begun by sculptor Gutzon Borgium (who went on to carve Mount Rushmore). Fifty-eight years and several other sculptors later the carving was completed.

Today, millions of visitors travel to the park each year to enjoy the lake, museums, and recreational facilities, to learn about unusual clams and fairy shrimp that lie in crater pools on the top of the mountain, or to see rare plants and flowers. During summer nights, the park comes alive with the magic of a laser light show unlike any in the world.

**Providence Canyon** near Lumpkin is Georgia’s “Little Grand Canyon.” This 1,108-acre state park contains sixteen canyons that have eroded 150 feet deep. The winding gullies display multicolored rock levels of tan, white, buff, pink, red, salmon, orange, and lavender hues (shades of color). The bottoms of the canyons are an ancient ocean floor where fossils exist. Some of the canyons are over a half-mile long and 300 feet across. The canyons were caused by the erosion that resulted when settlers cleared trees to farm the land in the mid-1800s. The farmers grew cotton in the same soil year after year without giving the soil time to rest and rejuvenate. Soon, the land was stripped of all vegetation. Then erosion—the enemy of all farmers—began to creep into a ditch that started out only about 5 feet deep. Eventually the canyons were created.

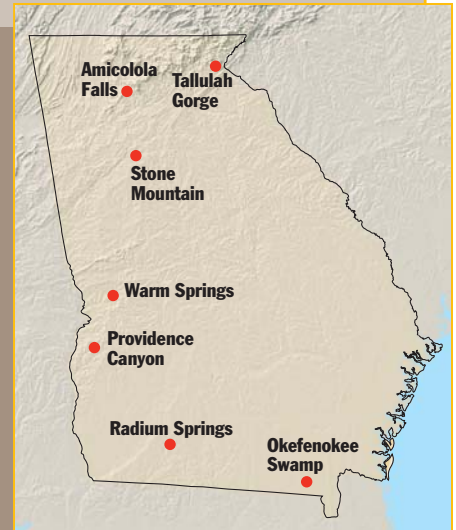
Today, trees and plants run throughout the state-operated park with seven miles of hiking trails. You can also wander through and explore the canyons.





The last of Georgia's seven natural wonders is **Amicalola Falls** near Dawsonville. It is located high in the watershed of a ridge known as Amicalola Mountain. In the Cherokee language, *Amicalola* means "tumbling water." A river runs along the western slope until it tumbles off. The falls provide an incredible 729-foot cascade of water, which drains into the Etowah River further south.

Amicalola is the southern end of the great Appalachian Mountain chain. The falls are just a few miles from the Southern Terminus Access Trail for the Appalachian Trail. Occasionally, you might see hikers leaving that point to begin their walk to Maine. Now, that's a hike! Can you guess the number of miles they must travel? Check it out.



### Map 13 Georgia's Seven Wonders

**Map Skill:** Which of Georgia's seven natural wonders is closest to where you live?

**Left:** Amicalola Falls is the highest waterfall east of the Mississippi.