

CHAPTER
3

The Regions of Texas

Trucks loaded down with lumber travel East Texas roads, hauling timber to sawmills.



Texas cotton is made into textiles like these bolts of fabric.



The Texas timber industry earned more than \$1 billion in 1997.

Texas contains more than 22 million acres of forests and woodlands.

In 1998 the value of Texas cotton production reached nearly \$1.2 billion.

U.S. and WORLD



The American timber industry earned more than \$46 billion in logging and sawmill production in 1997.

In 1996 the United States contained more than 746 million acres of forests and woodlands.

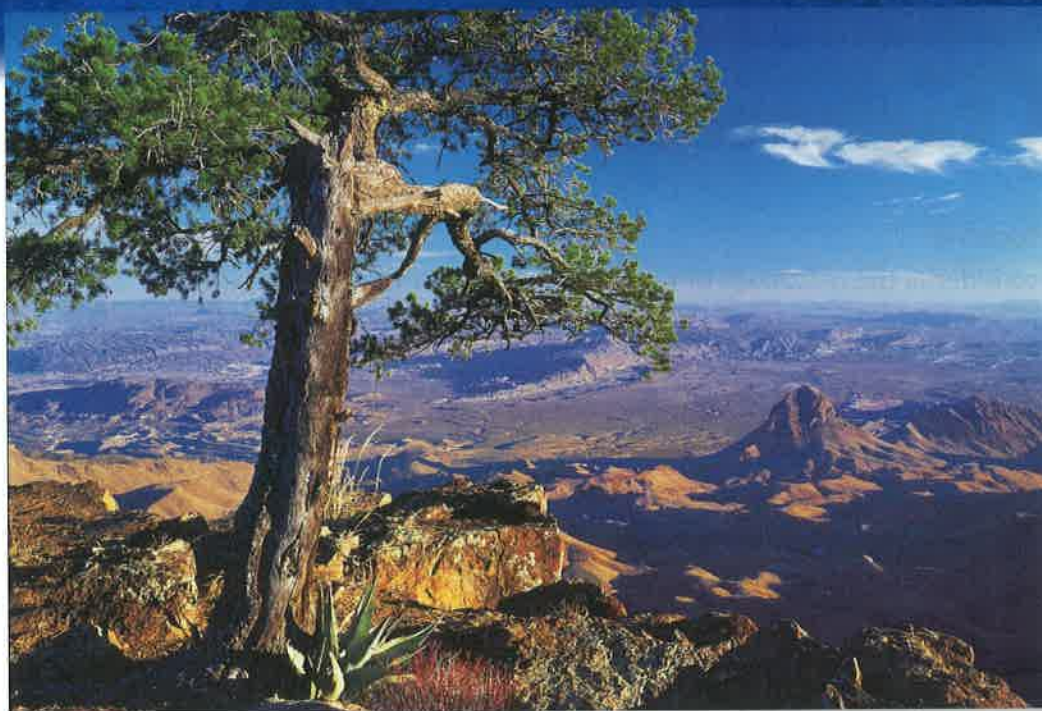
American farmers harvested more than \$4.1 billion worth of cotton in 1998.

Forests in the United States provide timber for paper, furniture, and other products.



Build on What You Know

Texas has a wide variety of landforms, water resources, climates, and plant and animal life. In many cases, geographers use these physical features to describe the different regions of the state. From the Piney Woods of East Texas to the dry deserts in the west, Texas is a land of many contrasts.



Big Bend National Park attracts tourists with its views and dramatic landscape.



Texans develop and produce new electronic technology.

With 800,000 acres of land, Big Bend National Park is the largest national park in Texas.

Sales of Texas livestock totaled more than \$8 billion in 1997.

Texas exports of computers and electronics were worth more than \$36.5 billion in 1997.

The largest national park in the United States is the Wrangell-St. Elias Park, which covers more than 8 million acres of Alaska.



Cattle are raised in almost every region of the United States.

In 1997 income from livestock raised in the United States totaled almost \$97 billion.

In 1998, American computer hardware sales reached more than \$254 billion.

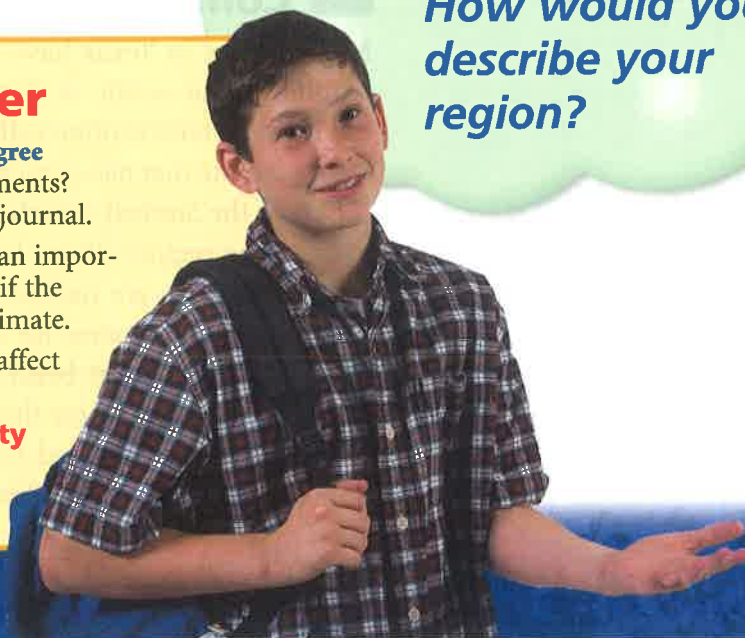
If you were a geographer . . .
How would you describe your region?

You Be the Geographer



What's Your Opinion? Do you **agree** or **disagree** with the following statements? Support your point of view in your journal.

- **Geography** Agriculture can be an important part of an area's economy only if the region has fertile soil and a warm climate.
- **Economics** Geographic factors affect all industries.
- **Science, Technology & Society** People have to adapt to their environment.



A Regional Crossroads

Read to Discover

1. Why is Texas considered the crossroads of natural regions?
2. What are four natural regions in Texas?

Define

- natural regions

Identify

- Sunbelt

Why It Matters Today

Texas has several regions with different landforms and climates. Use cnnfyi.com or other **current events** sources to find information about how natural landforms affect people's lives. Record your findings in your journal.

The Geographer's World

In the 1880s, two ranch workers were exploring a canyon in far West Texas. Looking over the canyon ledge they saw almost 20 horses, but no people. The men climbed down the steep canyon walls, but could not find a way to get the horses out. They could not figure out how the horses had gotten into the canyon. There was little the cowboys could do for the horses. With only a few plants to eat, the animals soon starved to death. These early ranch workers named the spot Dead Horse Canyon.



Lost horses led to the unique name of Dead Horse Canyon.



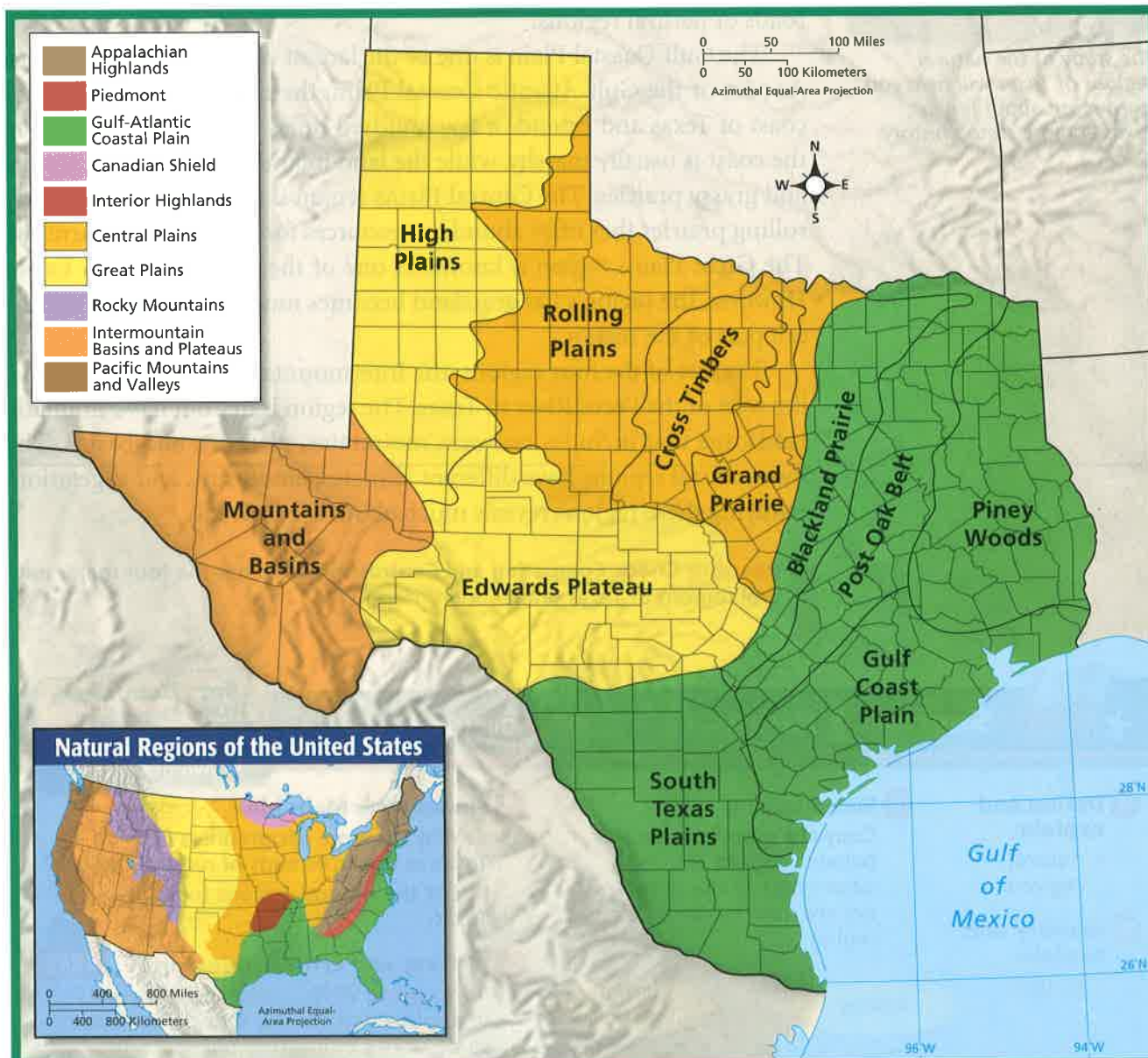
Common Regional Names

Many places in Texas have unusual names that describe some geographic characteristic or feature. For example, the southern region of the United States is often called the **Sunbelt**. This name emphasizes the warm climate that has attracted many new residents to the region. Texas is part of the Sunbelt. Northwestern Texas is often called the Panhandle because the region's shape looks much like the handle of a pan. Other regions of Texas are named for their special geographic features. The Redlands is an old name for an area of northeastern Texas that has reddish soil. The Coastal Bend, centered around Corpus Christi, gets its name from an area where the Gulf Coast "bends."

Texas is often divided into regions named for their general locations—East Texas, West Texas, South Texas, or North Texas. These

regions have vague boundaries because they are based on perceptions, or points of view. For example, people might have differing opinions about the boundaries of West Texas. Some Texans say Fort Worth is in West Texas because the city has close economic and historical ties to that region's cattle industry. However, Fort Worth is actually located in the eastern half of North Texas. Thus, human characteristics as well as physical features can define a region.

✓ Reading Check Summarizing What characteristics of a region help to determine its name?



Natural Regions of Texas

Interpreting Maps There are 10 natural regions in the United States. Geographers have divided the four natural regions of Texas into different subregions.

TAKS Skills **Locate** What four natural regions are found in Texas? **★ TEKS**



The study of the natural regions of Texas will help you learn more about life in Texas and the state's history.

Natural Regions of Texas

Geographers study **natural regions** to compare and contrast different areas. A natural region is an area with a common physical environment. Natural regions are defined by physical features. These features include types of climate, landforms, plant life, and soil. For travelers, physical features are clues that they are leaving one region and entering another.

Some geographers divide the continental United States into 10 major natural regions. Parts of four natural regions are found in Texas, which is more than any in other state. For this reason, Texas is called the crossroads of natural regions.

The Gulf Coastal Plain is one of the largest natural regions in Texas. As part of the Gulf-Atlantic Coastal Plain, the region covers the entire coast of Texas and extends a few hundred miles inland. The land along the coast is usually marshy, while the land inland has both dense forests and grassy prairies. The Central Plains region is characterized by gently rolling prairies that offer abundant resources for ranching and farming. The Great Plains region is known as one of the flattest areas on Earth. However, the region's flat grassland becomes more rugged in the southern part of the region.

The last of the four regions, the Intermountain Basins and Plateaus, lies west of the Pecos River in Texas. The region is dry but has a dramatic landscape that includes canyons, mountains, plateaus, and basins. The four natural regions have different climates, landforms, and vegetation. Studying these regions reveals much about life in Texas.

★ Reading Check Comparing and Contrasting How are the four major natural regions of Texas similar and different?



Section 1 Review

★ TEKS Questions 4b, 5

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keyword: ST3 HP3

1 Define and explain:

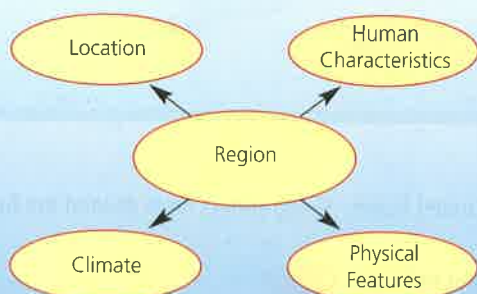
- natural regions

2 Identify and explain:

- Sunbelt

3 Summarizing

Copy the graphic organizer below. Use it to explain what types of characteristics are used to define a region.



4 Finding the Main Idea

- Why do some geographers refer to Texas as the crossroads of natural regions?
- List the natural regions found in Texas.

5 Writing and Critical Thinking



Contrasting Write a letter to someone in another region. Tell that person about some of the interesting physical and human characteristics of your region. Consider the following:

- the name of your region
- characteristics that make your region similar to and different from other regions

The Gulf Coastal Plain

Read to Discover

1. What types of features make the subregions of the Gulf Coastal Plain different?
2. How have Texans in the Gulf Coastal Plain adapted to and used their environment?

Why It Matters Today

The Gulf Coastal Plain receives more rainfall than any other region in Texas. Use ONfyi.com or other **current events** sources to find information about the problems too much rainfall can cause. Record your findings in your journal.

Define

- subregions
- bayous
- petrochemicals
- lignite

Identify

- Big Thicket National Preserve
- Rio Grande valley
- Metroplex

The Geographer's World

As a boy, Texas naturalist Lance Rosier loved to explore the woods of East Texas. He knew the woods like the back of his hand. One overcast day, Rosier guided a friend into the woods to photograph a rare flower. He marched straight through the woods for two miles. Without searching, he stopped at a spot that had no landmarks. Astonishing his friend, Rosier said, "I saw it two years ago. Oh, here it is!"



Lance Rosier played a key role in the creation of the Big Thicket National Preserve.

★ The Piney Woods

The Gulf Coastal Plain can be divided into five **subregions**, or smaller regions. The easternmost subregion of the Gulf Coastal Plain is called the Piney Woods. It is part of a pine forest that covers the entire southern United States from the Atlantic Ocean to Texas. Most of the land in the Piney Woods is rolling hills. The Piney Woods also has one of the wettest climates of any Texas subregion. Rainfall helps support a large timber industry in the heavily forested areas of the Piney Woods. Gum, hickory, oak, and pine trees are an important source of timber and wood products for the subregion. Farming is also an important part of the subregion's economy. The rich soils and wet climate are ideal for producing many fruits and vegetables. In areas where farmers have cut down forests, tall grasses have grown. Farmers raise cattle in these open grassy areas.

Oil is another valuable natural resource in this subregion. Large amounts of oil were discovered here in the 1930s. The oil industry contributes to the economy of many regional cities such as Henderson and Kilgore. The subregion's creeks, lakes, and rivers also provide it with significant water sources. The area includes the Neches, Sabine, and Trinity Rivers as well as the Toledo Bend and Sam Rayburn Reservoirs. These rivers and reservoirs provide many Texans with drinking water and places of recreation.

Many people in the Piney Woods live in rural areas or small towns. These towns serve as local markets for farmers and the lumber industry. The subregion's largest cities are Longview and Texarkana. These cities have prospered as the agricultural, oil, and lumber industries have grown.

Texans have taken action to preserve some of the area's natural resources. The **Big Thicket National Preserve** was established to protect about 85,000 acres of trees and wildlife in the Piney Woods. This subregion also has four national forests: the Angelina National Forest, Davy Crockett National Forest, Sabine National Forest, and Sam Houston National Forest. The state conserves the natural resources of these forests. When trees are cut down, new trees are planted in their place.

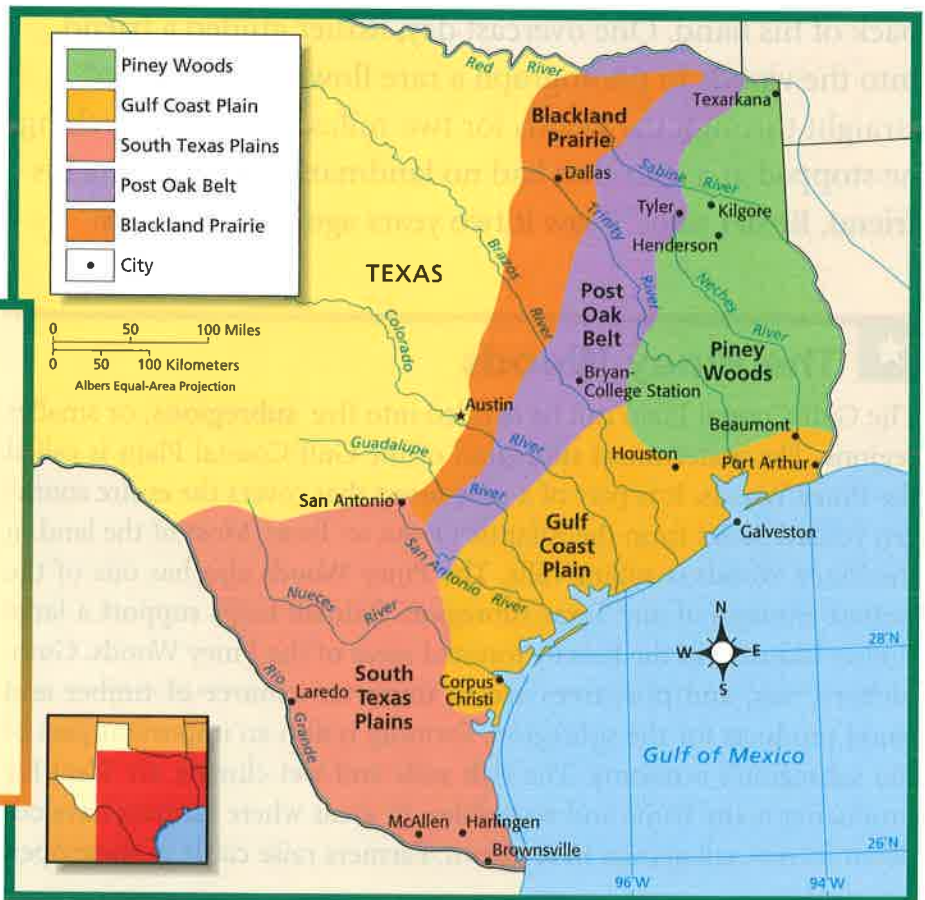
★ TEKS **Reading Check Analyzing Information** How have the natural resources of the Piney Woods affected its economy?

Subregions of the Gulf Coastal Plain

Interpreting Maps With Houston and Dallas located in the region, the Gulf Coastal Plain is the most populated region in Texas.

TAKS Skills

- 1. Locate** What rivers form the boundaries of the Gulf Coastal Plain region in Texas? **★ TEKS**
- 2. Contrasting** How do you think the environment differs between these five subregions? **★ TEKS**



★ The Gulf Coast Plain

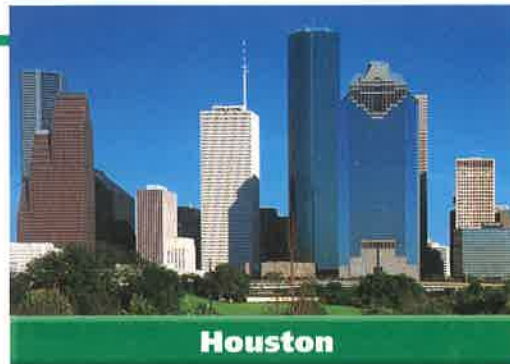
South and west of the Piney Woods lies the Gulf Coast Plain. This subregion extends south along the Gulf Coast from the Sabine River to Corpus Christi Bay. A chain of barrier islands runs nearly the entire length of the Texas coast. These islands are covered by brush, grasses, and sand. Shallow bays separate the islands from the mainland. On the mainland near the coast, the land is marshy and full of **bayous**. These usually form as tributaries off of larger bodies of water. The water in most bayous moves slowly. Inland, scattered groves of trees dot the lush grasslands of the plain.

The soil and climate of the Gulf Coast Plain have made it a rich agricultural area. Farmers grow rice in the eastern areas near the coast. Farther south, in the Coastal Bend area, farmers produce cotton and grains. The coastal grasslands also support one of the largest livestock industries in Texas. The Gulf waters are another valuable resource. Fishing and shrimping are major sources of income for many Texans.

Oil is another offshore resource, with offshore oil rigs providing many jobs for Texans. The center of the Texas and U.S. oil-refining industry lies between Beaumont and Houston. The area also has a large **petrochemicals** industry. Petrochemicals are chemicals made from oil and natural gas. They are used in most industries. Ports provide another boost to the economy of the Gulf Coast Plain. Some of the largest cities in this subregion are port cities: Houston, Corpus Christi, Beaumont, Galveston, and Port Arthur. Products are shipped in and out of these ports to destinations worldwide. As global markets have expanded, these ports have become increasingly busy. Houston is the largest city in Texas and has the fourth-largest population in the United States. The Houston metropolitan area stretches for more than 540 square miles. Although Houston lies about 50 miles inland, a huge ship channel connects the city with the Gulf of Mexico. Houston is the third-largest seaport in the nation and a major center for international shipping. The natural resources of the Gulf Coast Plain have boosted its industry and have attracted many people to this subregion.

★ **Reading Check Evaluating** How have national and international markets affected the Gulf Coast Plain?

Texas Cities



History: Houston was founded in August 1836 by Augustus and John Allen. The Allen brothers chose a site along the Buffalo Bayou, hoping the town would become an important port. Houston was the capital for a short period during the days of the Republic. However, the town did not begin to boom until the 1900s when the oil industry grew.

Population in 2000: 1,953,631

Relative location: Houston is located in the southeast corner of Texas.

Region: Gulf Coastal Plain

County: County seat of Harris County

Special feature: Largest city in Texas

Origin of name: Houston was named by the Allen brothers in honor of Sam Houston.

Economy: Houston has one of the busiest ports in the nation, making the city a global trade center. Houston also has many oil drilling, refining, and other production facilities. Oil-related industries, such as plastics and petrochemicals, have boomed in this region. Houston is also home to the Lyndon B. Johnson Space Center.





The South Texas Plains

The South Texas Plains subregion lies to the west of the Gulf Coast Plain. The South Texas Plains extends south to the Gulf of Mexico, where the land is low and flat. In the northern and western areas of the subregion, the land rises gradually and becomes more hilly. The climate in this subregion is drier than in the Gulf Coast Plain. Grasslands cover the coastal section, but dense brushlands characterize the subregion farther inland. One early traveler in South Texas noted the interesting plant life of the region.

Analyzing Primary Sources

Identifying Bias Do you think DeWees liked the South Texas landscape?

Texas Voices

“The road is oftimes [often] completely hedged in [lined] for miles by long rows of prickly pear. . . . All the shrubbery throughout this country is covered with thorns.”

—William B. DeWees, quoted in *Texas: A Geography*, by Terry Jordan, et al.

The South Texas Plains subregion has many natural resources. One of the richest farming areas in the nation—the **Rio Grande valley**—lies in this subregion. Temperatures there are warm for most of the year, and freezes are rare. The Valley has fertile soils from sediment washed down the Rio Grande. Farmers grow citrus fruits, such as grapefruits and oranges, in large quantities. Vegetable crops, sugarcane, and specialty crops such as aloe vera add to the area’s wealth. Many people in the Valley work in farming-related businesses.

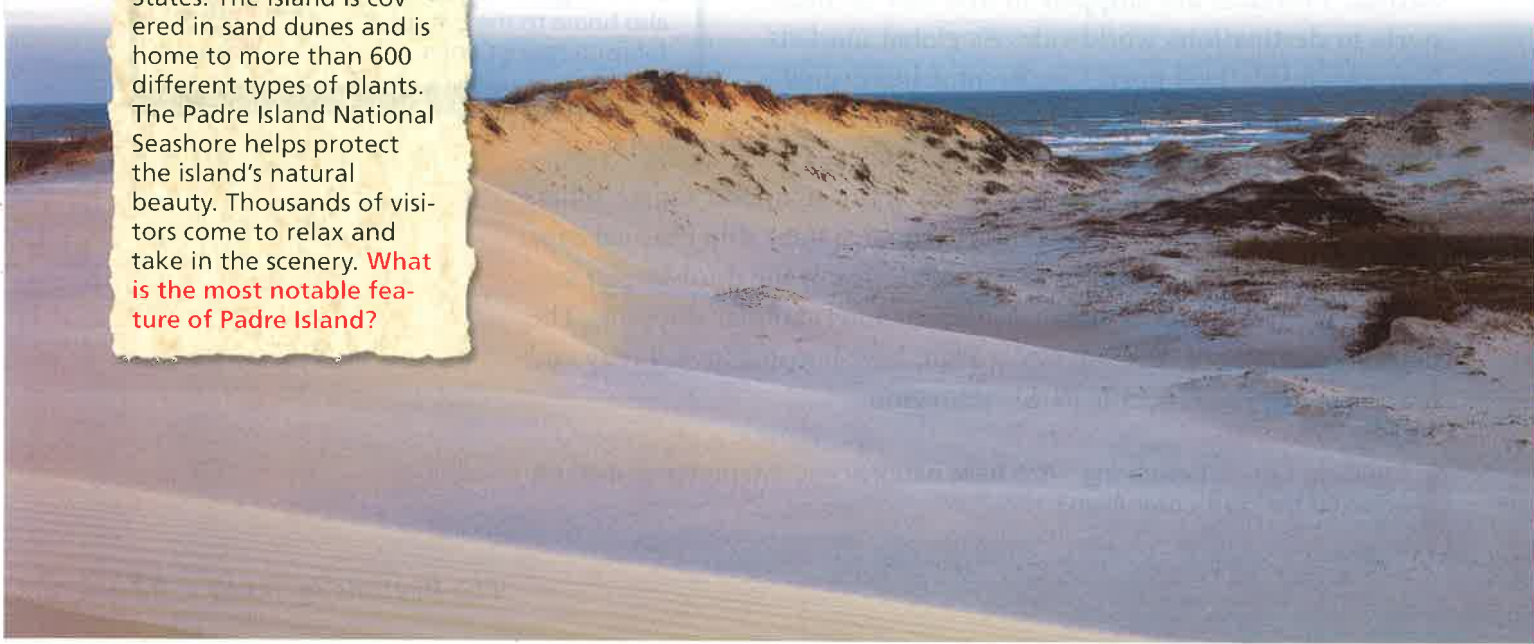
Ranches are also common throughout the South Texas Plains. King Ranch is the largest of these ranches, stretching for more than 1 million acres, or 1,562 square miles. Oil and natural gas wells dot the landscape, but farming and ranching are the main sectors of this subregion’s economy.

Although the South Texas Plains subregion is largely rural, it does include several cities. The subregion’s largest city is San Antonio. Founded in 1718 by Spaniards, the city is home to many historic



Padre Island

One of the most unusual features of the Gulf Coastal Plain is Padre Island. This 133-mile-long island has the longest sand beach in the United States. The island is covered in sand dunes and is home to more than 600 different types of plants. The Padre Island National Seashore helps protect the island’s natural beauty. Thousands of visitors come to relax and take in the scenery. **What is the most notable feature of Padre Island?**



buildings and is one of the state's most popular tourist attractions. San Antonio is also home to several large military bases. These bases play an important role in the local economy. San Antonio is a retail trade center for the South Texas region and a major center for international trade with Mexico.

Although San Antonio is the largest city in this subregion, Laredo is the fastest growing. Other border towns such as Brownsville, Harlingen, and McAllen are also expanding rapidly. While tourism and international trade are important to these cities, farming is still the area's most important economic activity.

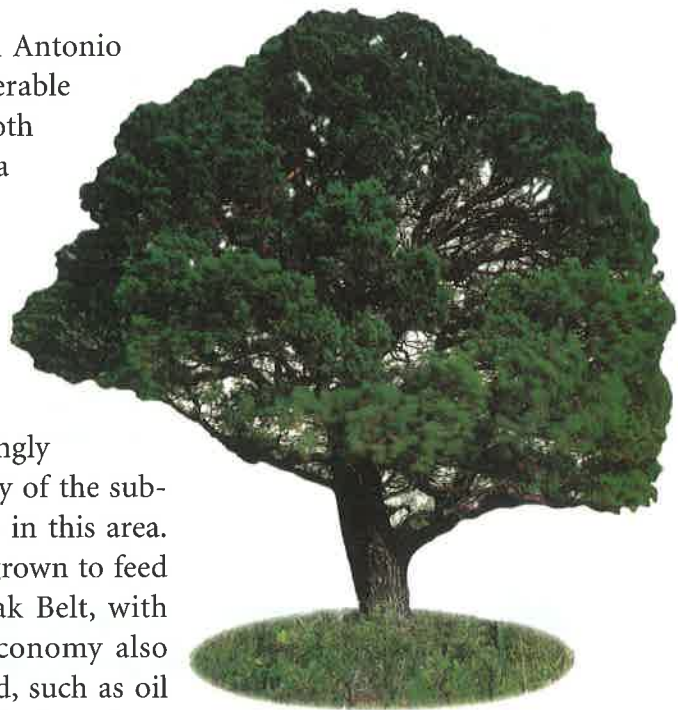
★ Reading Check Summarizing What are the natural resources of the South Texas Plains, and how do Texans use them to develop the subregion's economy?

★ The Post Oak Belt

The Post Oak Belt subregion begins just outside of San Antonio and stretches north to the Red River, covering a considerable area in east-central Texas. The Post Oak Belt lies west of both the Piney Woods and the Gulf Coast Plain. The belt has a similar climate to the Piney Woods but receives a little less rainfall. The area's soil is sandier, and its land is mostly flat. In addition, grassland prairies cover parts of the Post Oak Belt.

A few parts of the Post Oak Belt are covered in trees such as post oak, blackjack oak, elm, hickory, pecan, and walnut. Mesquite trees have become increasingly common in the Post Oak Belt. Early settlers cleared many of the subregion's native trees for farming. Cotton is a major crop in this area. Other important crops are corn and sorghum—a grain grown to feed livestock. Livestock is a major industry in the Post Oak Belt, with many farmers raising cattle and hogs. The regional economy also depends on natural energy resources found underground, such as oil and natural gas. In addition, deposits of **lignite**, a type of soft coal, are mined there.

As in the Piney Woods, most residents of the Post Oak Belt live in rural areas. However, a number of towns and small cities are scattered throughout the area. The largest cities are Bryan–College Station and Tyler. Manufacturing industries such as food processing, furniture construction, and metalworking have developed in these cities. Texas A&M University, one of the state's top educational institutions, is located in this subregion.




Oak trees can be found throughout the Post Oak Belt.

★ Reading Check Drawing Inferences and Conclusions How have Texans changed and adapted to the environment of the Post Oak Belt?



Interpreting the Visual Record


Downtown Dallas. Many corporations have located their headquarters in downtown Dallas. How do you think these businesses have affected the growth of the city? 

 **The Blackland Prairie**

The Blackland Prairie subregion stretches west alongside the Post Oak Belt. The climate here is similar to the Post Oak Belt climate; it is wet and mild. Rolling prairies cover the landscape. The area’s rich black soils make it ideal for farming. One early settler, Edward Smith, thought the blacklands had “the finest soil in the country.” Farmers here grow cotton, grains, and vegetables. Farmers also raise cattle, chickens, and hogs.

The Blackland Prairie is one of the most heavily populated subregions in Texas. Its many cities include Dallas, Garland, Grand Prairie, Mesquite, Plano, Richardson, Sherman, Temple, and Waco. Dallas, which is located in the northern area of the Blackland Prairie, is the second-largest city in Texas. This city has many industries. Home to a Federal Reserve Bank, Dallas is the center of the banking industry in both Texas and most of the Southwest. Many national insurance and oil companies have their corporate headquarters there. Dallas is also a major center for the international cotton market. The computer age began there at Texas Instruments. The Dallas economy is based in part on the manufacture of items ranging from computer electronics to missile parts and high-fashion clothing.

Dallas lies 33 miles east of Fort Worth, a city in a neighboring subregion. The economies of the two cities are so interlinked that people often refer to them as the **Metroplex**. The two cities are a major transportation hub. The Dallas–Fort Worth International Airport is located between them. Interstate 35 is an important trade route that runs through both Dallas and Fort Worth. The highway starts at the Mexican border and runs through the United States almost to Canada. The many roads and railroads around the Metroplex help to promote the area’s growth.

 **Reading Check Evaluating** How has transportation affected the Blackland Prairie region?

 **Section 2 Review**  Questions 3, 4a, 4b, 5  keyword: ST3 HP3

1 Define and explain:

- subregions
- bayous
- petrochemicals
- lignite

2 Identify and explain:

- Big Thicket National Preserve
- Rio Grande valley
- Metroplex

3 Categorizing

Copy the table below. Use it to identify the subregions, their location, and their special physical and human features.

Subregion	
Location	
Special Physical and Human Features	

4 Finding the Main Idea

- a. What industries have encouraged the growth of cities in the Gulf Coastal Plain region?
- b. How are the South Texas Plains and the Blackland Prairie similar and different?

5 Writing and Critical Thinking

Summarizing Compare the subregions of the Gulf Coastal Plain and describe how Texans have adapted to and modified their environments. Consider the following:

- climate, landscape, minerals, and soils
- human economic activity in each subregion



Section

3

The Central Plains

Read to Discover

1. What are the different physical and human characteristics of the subregions of the Central Plains?
2. How do the physical features of the Central Plains affect industry in the region?

Why It Matters Today

Ranching is big business in the Central Plains. Use CNNfyi.com and other **current events** sources to find information about ranching today. Record your findings in your journal.

Define

- **transportation center**

The Geographer's World

In May 1849 U.S. Army major Ripley Arnold and a group of soldiers entered the Central Plains. Their orders were to build a fort on the Texas frontier. They traveled up the Trinity River, passing through a wild and beautiful prairie. Arnold decided to build the fort there. The outpost was named Fort Worth. Early visitors to the fort praised Arnold for choosing such a rich land for his settlement.



Fort Worth was named after General William Jenkins Worth, a hero of the Mexican War.

★ The Grand Prairie


The Central Plains contains three main subregions: the Grand Prairie, the Cross Timbers, and the Rolling Plains. The Grand Prairie's climate is very similar to that of the Blackland Prairie to the east. However, the soil is thinner than that of the blacklands. The Grand Prairie is covered by grasses, shrubs, and small trees. These grasslands are particularly well suited for raising cattle. Other important livestock in this subregion include goats, hogs, poultry, and sheep. Although the area has an agricultural economy, the thin soil of the subregion limits crop production. Corn, oats, sorghum, and hay are grown primarily as animal feed. Farmers also grow cotton in some areas of this subregion.


Fort Worth is by far the largest city in the Grand Prairie and is also the largest city in the Texas Central Plains. The city plays a vital role in the subregion's economy. With some of the busiest rail yards in the nation, Fort Worth is a **transportation center**, or place where goods arrive to be

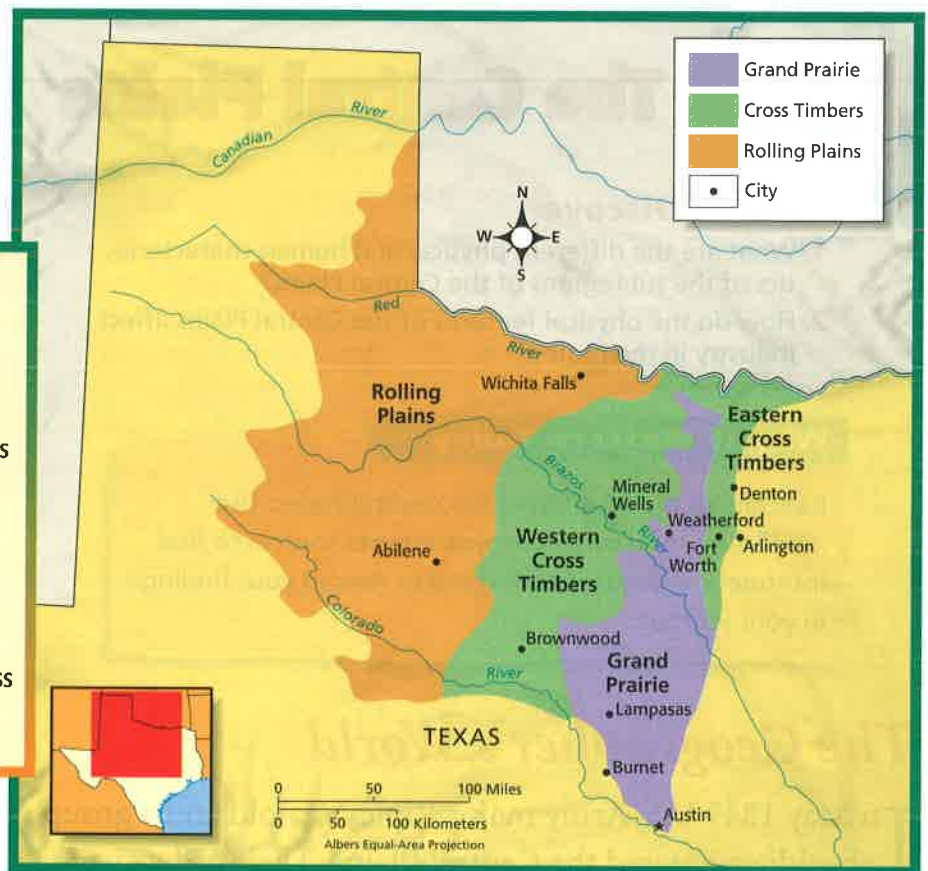
Subregions of the Central Plains

Interpreting Maps The Cross Timbers subregion forms two belts of forest land that divide the prairies of the Central Plains.


TAKS Skills

1. Locate Where in Texas is the Central Plains region?  TEKS

2. Drawing Inferences and Conclusions What do you think the number of cities in Eastern Cross Timbers says about the region's settlement patterns?  TEKS



shipped to many destinations. The city is also a major processing and transportation center for livestock and farm products. Most important, however, are Fort Worth's manufacturing industries. The city specializes in the manufacture of airplanes, electronics equipment, and helicopters.

 **Reading Check Evaluating** How do the natural resources of the Grand Prairie affect its economy?

The Cross Timbers

Early visitors and settlers noted how the Cross Timbers forestland divided the surrounding prairie land. Two belts of forestland made up the Cross Timbers: the Western Cross Timbers and the Eastern Cross Timbers. The Western Cross Timbers lies west of the Grand Prairie. The Eastern Cross Timbers is located between the Grand Prairie and Blackland Prairie. The Eastern Cross Timbers is narrower than the Western Cross Timbers, averaging about 15 miles across.

When farmers moved into the region, they cut down many trees. Some of the native forest vegetation can still be found, however. The Eastern Cross Timbers contains some elms, hickories, and post oaks. Blackjack oak, cedar, hickory, mesquite, pecan, and post oak trees all grow in the drier Western Cross Timbers. The sandy soil of the Cross

Timbers absorbs water well, making it a particularly good place for farming. Farmers grow crops ranging from peanuts to corn, cotton, and hay. Ranchers raise cattle, horses, and sheep there. Since 1917 the subregion has also provided Texas with energy resources such as oil and natural gas.

The Eastern Cross Timbers cuts the Metroplex in half, running between Dallas and Fort Worth. Cities such as Denton have manufacturing plants. While the Western Cross Timbers has no large cities, its towns include Brownwood, Mineral Wells, and Weatherford.

★ Reading Check Analyzing Information How have farmers modified the landscape of the Cross Timbers subregion?

★ The Rolling Plains

The Rolling Plains are located in the westernmost part of the Central Plains. Prairie grasses cover most of its hilly terrain. The thin soil of the subregion also supports some brush, hardwood trees, and mesquite trees. The Rolling Plains subregion is particularly well suited for cattle ranching. Steep valleys provide shelter for cattle, while the grasslands and rivers provide them with food and water. In areas with poorer vegetation, ranchers raise goats and sheep.

Where there is good farmland, farmers grow cotton, sorghum, and wheat. The Rolling Plains are also a source of oil and natural gas. The population of the Rolling Plains is much smaller than that of subregions in eastern Texas. Abilene and Wichita Falls are its largest cities. Both cities have meat and dairy processing facilities and serve as distribution centers for this subregion. Small market towns are also scattered throughout the area.

★ Reading Check Comparing and Contrasting How is the Rolling Plains subregion similar to and different from the Cross Timbers?

Biography



Walter Prescott Webb

(1888–1963)

When Walter Prescott Webb was a child, his family moved from East Texas to the drier Central Plains. The differences between the two regions later influenced his work. After studying history at the University of Texas, Webb wrote and edited more than 20 books. His subjects varied from the Texas Rangers to the frontier to conservation of natural resources. **What was an early influence on Webb's research?**

Section 3 Review

★ TEKS Questions 2, 3a, 3b, 4

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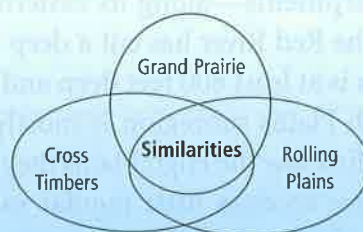
keyword: ST3 HP3

1 Define and explain:

- transportation center

2 Comparing and Contrasting

Copy the graphic organizer below. Use it to compare and contrast the physical and human features of the Central Plains.



3 Finding the Main Idea

- Compare the population distribution of the Central Plains subregions.
- How have the geographic features of the Central Plains affected its economy?

4 Writing and Critical Thinking

Drawing Inferences and Conclusions Create a journal of a trip across the Central Plains, explaining how life and the landscape differ between the subregions. Consider the following:

- the physical features of the region
- industries in each subregion



Read to Discover

1. What are the physical features of the Great Plains?
2. How have Texans adapted to the environment of the Great Plains?

Why It Matters Today

Erosion has affected the landscape of the Great Plains. Use CNNfyi.com and other **current events** sources to find information about erosion or other problems farmers face. Record your findings in your journal.

Define

- escarpments
- fault

Identify

- Caprock



Cockleburs cause problems for ranchers in the Great Plains.

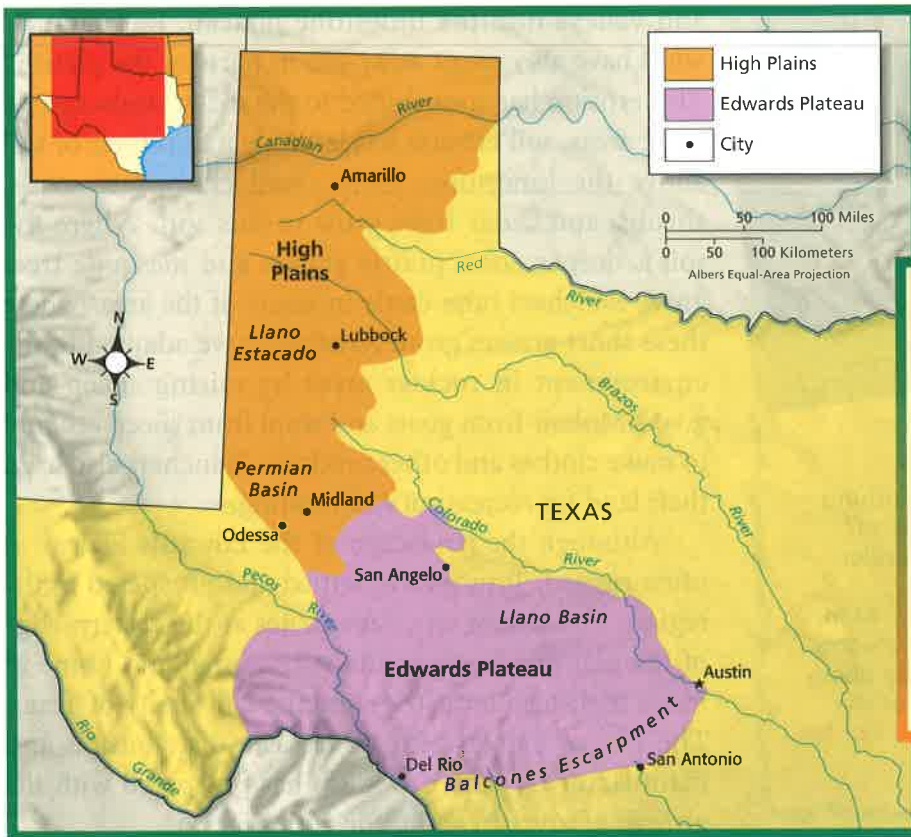
The Geographer's World

Gilbert Jordan grew up in a ranching community in the Hill Country. Ranch life was full of challenges. Weeds called cockleburs grew in nearby pastures and were a particular burden to ranchers. These burs get caught in the wool of the sheep and irritate cattle and horses. Ranchers had to pull cockleburs out of the pastures by hand. As Jordan remembers, “Pulling up cockleburs was a hot, mean job”—and every year the cockleburs would reappear in the pastures.

**The High Plains**

The Texas Great Plains includes two subregions: the High Plains and the Edwards Plateau. The High Plains subregion covers most of the Texas Panhandle. The land of the High Plains is higher than the Central Plains region. A hard bed of rock below the soil known as the **Caprock** is another noticeable physical feature in the area. Erosion of the rock has created cliffs—called **escarpments**—along its eastern and western sides. Over millions of years the Red River has cut a deep canyon into the Caprock. Palo Duro Canyon is at least 800 feet deep and more than 60 miles long. However, the High Plains subregion is mostly flat open prairie. When Spanish explorers first saw the High Plains they named it Llano Estacado.

The High Plains receives little regular rainfall. Early settlers here were certain that the land could not be farmed. However, the rich



Subregions of the Great Plains

Interpreting Maps The Edwards Plateau has a more rugged landscape than the High Plains.

TAKS Skills

- 1. Locate** Where is the Great Plains region located? ★TEKS
- 2. Contrasting** How do you think the landscape has affected the growth of cities in the Edwards Plateau subregion? ★TEKS

grassland did attract cattle ranchers. Today, feedlots—where cattle are raised on feed rather than grass—are scattered throughout the High Plains. In recent decades much of the grassland has been turned into farmland. Farmers pump water out of the Ogallala Aquifer to irrigate their fields of wheat and cotton.

Texans have discovered large deposits of oil and natural gas in the High Plains area. Oil wells dot the subregion. The few cities in the subregion provide services for the ranching, farming, and oil industries. For example, Lubbock and Amarillo serve as meat processing and distribution centers, while Midland and Odessa have several oil companies.

★ TEKS Reading Check Finding the Main Idea How have Texans adapted to and modified the environment of the High Plains?

★ The Edwards Plateau

The Edwards Plateau subregion lies just south of the High Plains. The Edwards Plateau is separated from the Gulf Coastal Plain by the Balcones Escarpment. This limestone ridge lies on a **fault**, or break in Earth's crust. This fault extends up from the southwestern part of Texas through San Antonio and Austin.

The Edwards Plateau is a high hilly area. A deep hard layer of limestone lies just below the plateau's soil. Streams have cut deep canyons

That's Interesting!

Llano Estacado

Some historians once thought that *Llano Estacado* meant "Staked Plain." They believed that Spaniards used stakes to mark their path across the flat treeless grassland. Other historians disagree. They doubt the Spanish could have found stakes on the treeless plains. Instead, they believe that *Llano Estacado* means "Stockaded Plain" and refers to the Caprock Escarpment, which looks like the wall of a fortress rising from the ground.



The Wind

Dorothy Scarborough

Folklorist and novelist Dorothy Scarborough wrote *The Wind* in 1927. This excerpt describes the struggle of a pioneer woman in the Great Plains town of Sweetwater, where Scarborough grew up.



For endless miles there seemed nothing but wind and sand and empty, far off sky. . . . But perhaps you do not understand the winds of West Texas. . . . Civilization has changed them. . . . Man, by building houses here and there upon the plains, by stretching fences, by planting trees, has broken the sweep of the wind. **What do you think life was like for Scarborough in Texas?**

and valleys into the limestone plateau. Rainfall and wind have also swept away soil in parts of the plateau. This erosion has contributed to the rocky landscape. In most areas, soil erosion has left only a thin layer of soil above the limestone. Only small clumps of grass, shrubs, and cedar trees grow in this soil. Where the soil is deeper, short prairie grasses and mesquite trees grow. Ranchers raise cattle in many of the areas where these short grasses grow. Ranchers have adapted to the environment in rockier areas by raising sheep and goats. Mohair from goats and wool from sheep are sold to make clothes and other products. Ranchers also lease their land for recreation and hunting.

Although the landscape of the Edwards Plateau is often rugged, Texans have settled and prospered in the region. The largest city, Austin, lies at the eastern edge of the plateau. Austin is the state capital and home to many high-tech industries and the University of Texas. The city of San Angelo serves as a distribution and manufacturing center. Del Rio has prospered with the growth of tourism and trade with Mexico.

The Llano Basin is in the northeastern area of the Edwards Plateau. The basin was formed by erosion from the Colorado River and its tributaries. Because of this erosion, the Llano Basin lies some 1,000 feet lower than the Edwards Plateau. There are few towns in the basin. Most residents are farmers or ranchers. Hunting and tourism also contribute to the basin's economy.

✓ Reading Check Analyzing Information How has erosion affected the landscape of the subregion?

Section 4 Review

Questions 3, 4a, 4b, 5

go.hrw.com Homework Practice Online

keyword: ST3 HP3

- 1 Define and explain:**
- escarpments
 - fault

- 2 Identify and explain:**
- Caprock

- 3 Categorizing**
- Copy the graphic organizer below. Use it to identify, categorize, and compare the physical and human characteristics of the subregions of the Great Plains.

Subregion	Physical Characteristics	Human Characteristics

- 4 Finding the Main Idea**

- a. What are some common physical characteristics of the High Plains?
- b. How have Texans made use of and changed the environment and landscape of the Great Plains?

- 5 Writing and Critical Thinking**

Making Generalizations and Predictions

Write a short editorial on the Great Plains focusing on changes to the environment and potential consequences.

Consider the following:

- how Texans modify the environment
- how erosion has affected the landscape of the Great Plains



The Intermountain Basins and Plateaus

Read to Discover

1. What are the physical characteristics of the Intermountain Basins and Plateaus region?
2. How does the geography of the region affect human activities there?

Why It Matters Today

Big Bend National Park is one of the most popular areas of the region. Use CNNfyi.com or other **current events** sources to find information about national parks. Record your findings in your journal.

Define

- basins
- tourism

Identify

- Guadalupe Peak
- Big Bend National Park

The Geographer's World

The high mountains, deep canyons, and desert views of West Texas have excited the imagination of Texans for years. According to one old story, a West Texas cowboy gave some strange directions to eastern visitors. "Go south from Fort Davis until you come to the place where rainbows wait for rain, and the big river is kept in a stone box, and water runs uphill." Despite the cowboy's directions, the confused visitors probably found their way and discovered the magical landscape of West Texas.



West Texas cowboys wore hats like this one to protect themselves from the summer sunshine.

★ Mountains and Basins

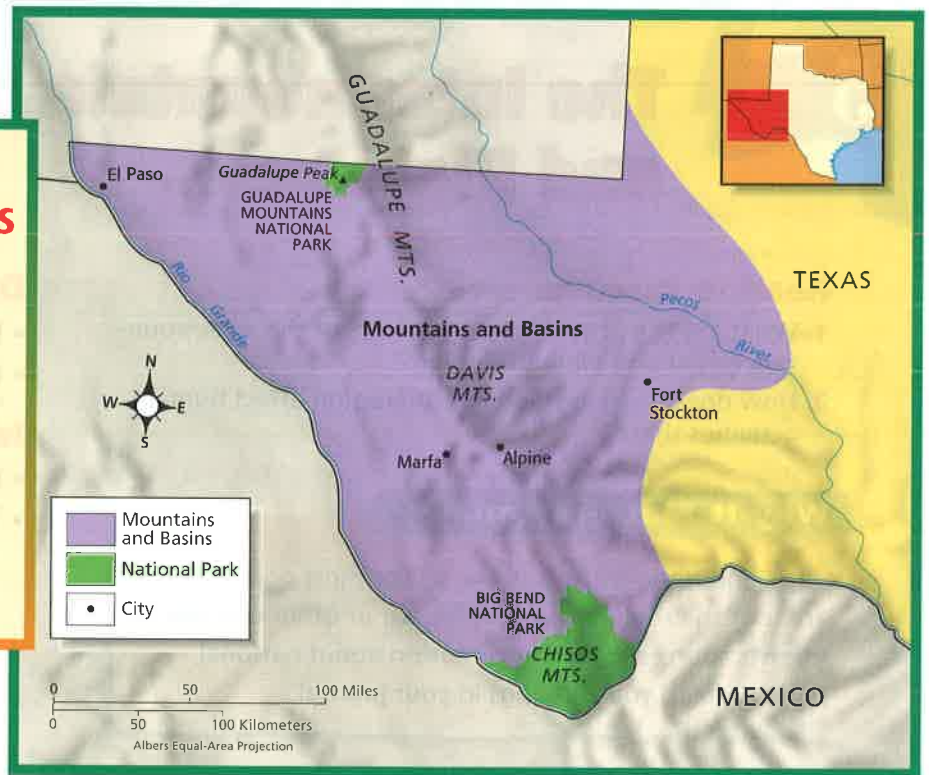
The Intermountain Basins and Plateaus region—sometimes called the Mountains and Basins—dominates the landscape of far West Texas. Mountains, plateaus, **basins**, and canyons form the landscape of the subregion. A basin is a lowland surrounded by higher land. With its high mountains and low basins, the area's elevation varies greatly. The lowest point is in a canyon cut by the Rio Grande. The bottom of this canyon sits 1,700 feet above sea level. The highest point in this subregion and in Texas is **Guadalupe Peak**, which reaches 8,749 feet above sea level. The peak is part of the Guadalupe Mountains near the New

The Intermountain Basins and Plateaus Region

Interpreting Maps This region is characterized by little rainfall and a dramatic desert landscape.

TAKS Skills

- 1. Locate** Where is this Texas subregion located? ★TEKS
- 2. Drawing Inferences and Conclusions** How do you think the environment has affected city growth in this subregion? ★TEKS



Mexico border. The Davis Mountains rise in the central area of the region. Several peaks in the Davis Mountains reach more than 7,000 feet. The Chisos Mountains are near the Rio Grande.

The climate of the region is also extreme. Summers are very hot, and winters can be cold. Whatever the temperature, this region is almost always dry. In the western areas of the region the average rainfall is less than 9 inches a year. The desert climate and landscape have limited the plant life in the area. Desert grasses, shrubs, mesquite trees, and cacti grow in the dry rocky soil.

The desert climate has also limited farming and ranching. Local ranches must be large because the desert grasses and plants offer a limited food source for cattle, sheep, and goats. Some Texans have managed to farm in the region by using irrigation. These farmers grow alfalfa, cotton, pecans, and vegetables. The region's economy has also been boosted by discoveries of oil, sulfur, and silver. The dramatic landscape has made **tourism** a large part of the economy. Tourism is the business of attracting visitors to a region or place.

The region has a small population and only a few small towns. The exception is El Paso, one of the largest cities in Texas. It sits along the Rio Grande in the westernmost corner of the state. Military bases and trade with Mexico have boosted the city's economy. In addition, Interstate 10—one of the most important U.S. highways—runs through El Paso. This major east-west shipping route has increased trade in the region.

★ **Reading Check Evaluating** How have Texans adapted to the geography and climate in the subregion?

That's Interesting!

Vast Western Spaces

The Mountains and Basins region extends from the Rio Grande east to the Pecos River. Because most of the region lies west of the Pecos River, it is sometimes called the Trans-Pecos area. *Trans* means "across" or "beyond."

★ Texas National Parks

Many businesses in El Paso have prospered by offering services to tourists. The beauty of the landscape also provides towns such as Alpine and Marfa with a major source of income. These towns serve as entrance points to one of the most popular tourist areas in Texas—**Big Bend National Park**. The park, which was named after its location in the bend of the Rio Grande, covers some 800,000 acres. Big Bend protects a wide variety of plants and animals, including the endangered peregrine falcon and the Mexican long-nosed bat.



Guadalupe Mountains National Park and Big Bend National Park offer many recreational activities, including bird-watching, camping, hiking, and river rafting. The National Park Service describes Big Bend as “the [most] outstanding scenic area of Texas.” It has a dramatic landscape of towering peaks and deep river canyons. In 1899 geologist Robert T. Hill described one canyon there.

Interpreting the Visual Record

Big Bend National Park. A variety of plant life exists within the park. **What types of vegetation can you identify?**

Texas Voices

“The scene within this canyon is of unusual beauty. . . . The austerity [severeness] of the cliffs is softened by colors which camera or pen cannot reproduce. These rich tints are like the yellow marble of Portugal and Algiers, warmed by reddening tones which become golden in the sunlight.”

—Robert T. Hill, quoted in *The Story of Big Bend*, by John Jameson

Analyzing Primary Sources

Finding the Main Idea
According to Hill, what attractions does Big Bend offer?

★ TEKS Reading Check Summarizing How have the landforms of the Mountains and Basins subregion affected the area’s economy and boosted tourism?



Section 5 Review



Questions 3, 4a, 4b, 5

go.hrw.com Homework Practice Online

keyword: ST3 HP3

1 Define and explain:

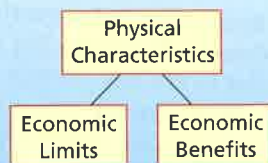
- basins
- tourism

2 Identify and explain:

- Guadalupe Peak
- Big Bend National Park

3 Identifying Cause and Effect

Copy the graphic organizer below. Use it to identify how the physical features of the subregion limit some economic activities and support others.



4 Finding the Main Idea

- What are the physical features of the region?
- Why are tourism and national parks important to the Mountains and Basins subregion?

5 Writing and Critical Thinking

Drawing Inferences and Conclusions Imagine that you are writing a story about the history of El Paso. Write a short paragraph describing why the population is limited in the region and why El Paso has grown.


Consider the following:

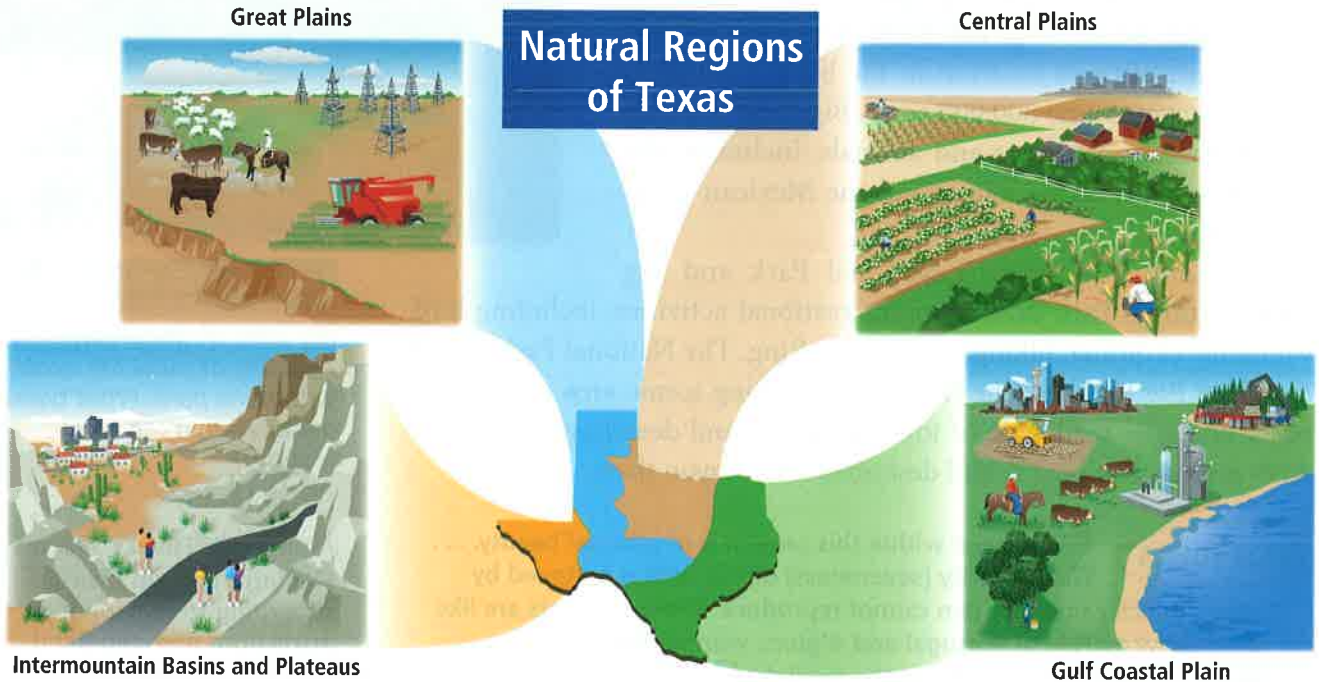
- how geography limited the region’s population
- the industries and other economic factors that have led to El Paso’s growth



CHAPTER
3
REVIEW

The Chapter at a Glance

Examine the following visual summary of the chapter. Then use the visual to pose and answer questions about geographic distribution in Texas regions that a classmate could use as a study guide. 



Identifying People and Ideas

Use the following terms or people in sentences.

- | | |
|--------------------|-------------------|
| 1. natural regions | 6. Caprock |
| 2. subregions | 7. escarpments |
| 3. bayous | 8. fault |
| 4. petrochemicals | 9. Guadalupe Peak |
| 5. Metroplex | 10. tourism |

Understanding Main Ideas

Section 1 (pp. 40–44)

1. Identify the four natural regions found in Texas.

Section 2 (pp. 45–50)

2. How have geographic factors led to urban growth in the Gulf Coastal Plain?

Section 3 (pp. 51–53)

3. What Central Plains features affect its economy?

Section 4 (pp. 54–56)

4. How have the physical features of the Edwards Plateau limited human activities in the region?

Section 5 (pp. 57–59)

5. How does the landscape of the Mountains and Basins region affect the economy there?

You Be the Geographer

Reviewing Themes

1. **Geography** Identify some of the consequences of Texans' modifications of the environment.
2. **Economics** Explain ways in which geographic factors have affected the economic development of Texas.
3. **Science, Technology & Society** In what ways have Texans adapted to the environment?



TAKS

Practice: Thinking Critically

1. **Comparing and Contrasting** How are the physical and human characteristics of the Mountains and Basins region similar to and different from those of the Great Plains region?
2. **Analyzing Information** Driving from the Gulf Coastal Plain into the Central Plains, how would the landscape change during your trip?
3. **Categorizing** What economic and geographic factors have contributed to the growth of cities in the Gulf Coastal Plain?

Interpreting Maps ★ TEKS

Study the map below. Then use the information on the map to help answer the questions that follow.



- Which region has the most national forests?
 - West Texas
 - South Texas
 - East Texas
 - the Panhandle
- Locate the national park in Texas that borders another country.

Analyzing Primary Sources ★ TEKS

Read the following quote by Walter Prescott Webb and answer the following questions.

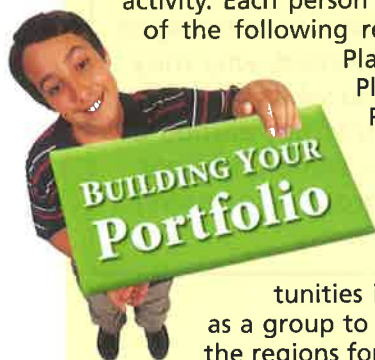
“A plains environment is . . . sub-humid [dry]. . . . The Great Plains offered such a contrast to the [eastern] regions . . . as to bring about a marked change in the ways of pioneering and living. For two centuries American pioneers had been working out a technique for the utilization [use] of the humid regions east of the Mississippi River. . . . Then . . . they . . . came out on the Great Plains, an environment with which they had had no experience. . . . The ways of travel, the weapons, the method of tilling the soil, the plows and other agricultural implements, and even the laws themselves were modified.”

- In what ways did settlers have to adapt to deal with the physical features of the Great Plains?
 - They had to develop new methods of farming in dry regions.
 - They changed the farming practices they used in the East only slightly.
 - The settlers were unable to farm.
 - They had to develop new methods for farming in wet regions.
- How do you think these early pioneers modified the environment of the Great Plains?

Alternative Assessment

Cooperative Learning ★ TEKS

Work with a small group to complete the following activity. Each person in your group should select one of the following regions of Texas: a) Gulf Coastal Plain b) Central Plains c) Great Plains d) Intermountain Basins and Plateaus. Each member should complete a model that shows the region's features, including natural resources, economic activities, educational institutions, and recreational opportunities in the area. Then work together as a group to create a brochure that compares the regions for tourists.



Internet connect

Internet Activity: go.hrw.com
 KEYWORD: ST3 TX3 ★ TEKS

Access the Internet through the HRW Go site to research the location, wildlife, land features, and main cities of a region in Texas. Then create a radio script in which you tell an audience about your region. You might want to record your radio script on an audiotape. Make sure you cover each of the topics written above and use standard spelling, sentence structure, grammar, and punctuation.

Social Studies Skills

WORKSHOP

Posing and Answering Questions

Understanding the geography of Texas is essential to understanding its history. A good way to learn about geography is to know how to pose and answer questions about the topic.

Posing and Answering Questions These skills involve formulating questions and knowing how to respond to them. These skills will help you understand information that is presented to you in various forms such as texts or maps. Listed below are guidelines that will help you with posing and answering questions.

- 1. Determine what information is presented in the source.** For example, if you are looking at a map, pose questions such as, “What does the map show?” and “Does it show any special geographic features?”
- 2. Find out what can be learned from the information presented.** If the map displays towns and geographic features, ask why a town on the map is located in a certain area. For example, why might a town be located near a river? Studying the geographic features of a region can also shed light on historical events. If you are studying a map that displays battle locations, pose questions such as “Did geographic features influence who won the battles?”
- 3. Identify the geographic distributions and patterns that are present.** Take an overall look at the map and think about how human and physical factors have affected what you see. Ask questions that help you understand how these factors have contributed to geographic distributions and patterns. Pose questions such as, “Why are

many settlements located in regions where water is plentiful?”, “What does this suggest about how the people in those settlements earn a living?”, and “How have physical features affected the types of transportation available to people living the region?”

Example

Geographers pose and answer questions about geographic distributions and patterns to better understand the physical and human systems of Texas. The following questions and answers relate to the population of Texas.

- 1. Determine what information is presented in the source.** If you are looking at a map of the San Antonio area, ask what physical and human features are shown.
- 2. Find out what can be learned from the information presented.** What does the information tell you about the population of Texas?
- 3. Identify the geographic distributions and patterns that are present.** Pose questions such as “What conclusions can be drawn about the geographic distributions and patterns of Texas?”

Practicing the Skill



Chapter 2, Section 3, Texans and Geography, describes where Texans have settled. Pose a question relating to where one group has settled, why they chose that location, and what the location suggests about how they earned a living. Then pose those same questions about another Texas group and answer the questions. 