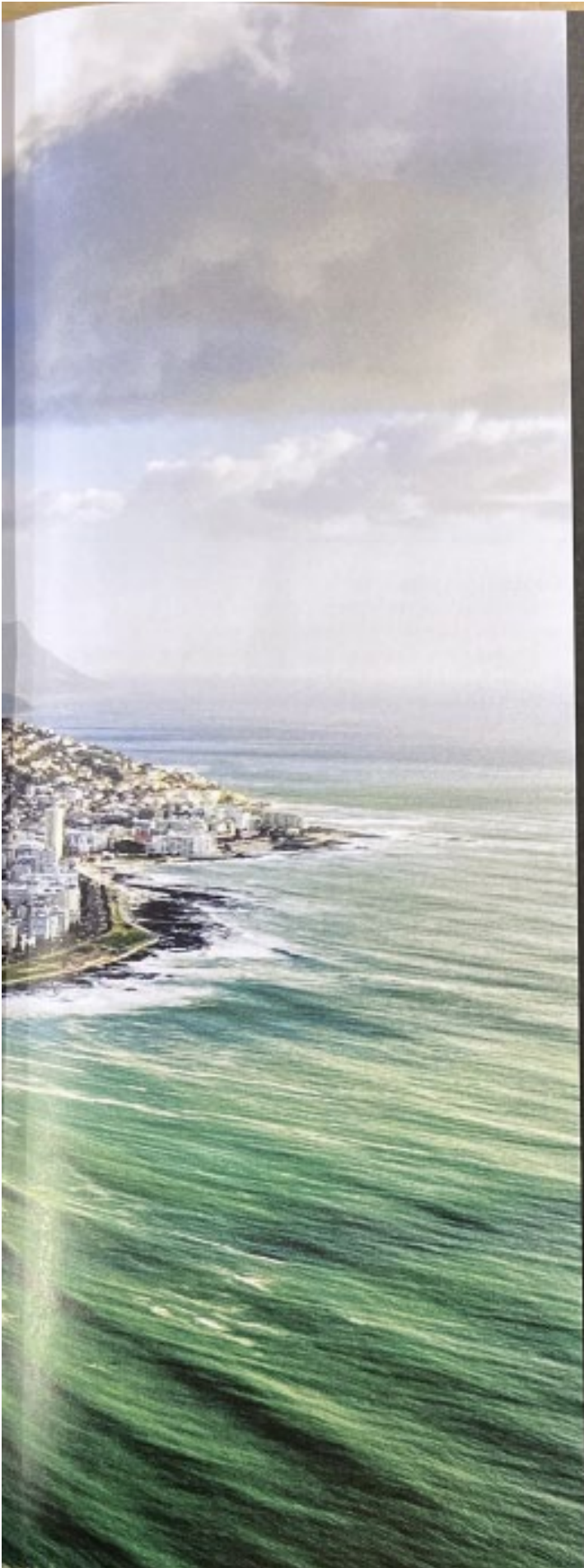# UNIT 1
# THINKING GEOGRAPHICALLY

# THE HUMAN IMPACT



Greenmarket Square in Cape Town

Humans have left an indelible imprint on every part of the globe, as evidenced here by the sprawling communities and built-up shoreline of Cape Town, South Africa. At the same time, Earth's features and processes have molded profound and enduring aspects of human societies—our cultures, economies, and politics. Human geography focuses on the interactions between humans and the physical environment.

Geographers interpret the world through a lens that allows them to make connections among local, national, regional, and global issues to better understand our human stories.

In this course, you'll use this geographic lens to investigate the movement of people, cultures, and ideas; the political organization of countries; and the development of agriculture, settlements, and linked economies. You'll build an informed global awareness and discover the factors that influence the world's livability and sustainability.

# SAFEGUARDING PRISTINE SEAS

Biodiversity makes our life possible. The rich diversity of species on Earth helps to keep our water clean and stabilize our climate, and contributes to food security. Enric Sala, National Geographic Explorer-in-Residence and founder of the Pristine Seas project, has made it his mission to preserve the biodiversity of Earth's oceans.

**A MISSION TO PROTECT** A team of scientists gathered by Enric Sala left for an expedition in 2005 to the Line Islands, a cluster of coral outcrops in the Pacific Ocean roughly 1,000 miles south of Hawaii. Some of the islands are U.S. territories, while the others belong to the nation of Kiribati (kee-rih-BAHS). In this remote patch of ocean, Sala's team conducted groundbreaking research on one of the few coral reef ecosystems that remain largely untouched by human activity. These studies provided scientific support for what would become an ecological triumph.

In January 2009, President George W. Bush signed into existence the Pacific Remote Islands Marine National Monument, which placed several U.S. territories, including the American Line Islands, off limits to commercial fishing and other for-profit activities. This protected zone was expanded in 2014 by President Barack Obama to more than 745,000 square miles—covering a greater area than all U.S. National Parks on land combined. The nation of Kiribati, meanwhile, has declared a 12-mile fishing exclusion zone around its Southern Line Island, which the team and Sala explored in 2009.

In 2008, Sala founded the Pristine Seas project to expand his work in exploration and conservation. Sala's methods, models, and data are intended to establish the threshold of ecosystem health that can be used to inform conservation priorities and efforts of governments and organizations. Pristine Seas expeditions have investigated some of the most isolated places on the planet in locations ranging from the South Pacific to the high Arctic. "These remote, untouched places are the only baseline we have left for what the oceans used to be like. They are like the instruction manual for the ocean," says Sala. The Pristine Seas team includes not only researchers but also filmmakers and policy and communications specialists who support the mission to discover, inform, and advocate for changes in the ways humans interact with the oceans. To date, Pristine Seas has inspired the protection of more than 3 million square miles in 22 of the largest marine reserves on the planet.

**CHALLENGES TO CONSERVATION** Enric Sala admits, "It is difficult to be optimistic about the ocean in my lifetime." Indeed, while Pristine Seas has cause to celebrate notable successes in protecting a number of fragile habitats, 2.2 million square miles is a tiny fraction of the oceans' total surface area. Notwithstanding all of the zones protected by the efforts of Pristine Seas and other groups, 97 percent of Earth's oceans are still open to fishing. Much of this vast area is vulnerable to overfishing and pollution, which Sala calls "ecological sabotage."

At the same time, fishing is a means of survival for millions of people. Recognizing this fact, Sala calls for governments to better manage fisheries, improve fish farming known as aquaculture, and enforce laws against marine pollution. He argues that marine conservation actually enhances the sustainability of the fishing industry, citing the example of a fishing community in Kenya where incomes doubled because marine reserves had helped restore the health of sea life in the region's waters. "We know what works," Sala says, "we just need the political will and the vision to protect much more of our waters." ▮

## GEOGRAPHIC THINKING

How might the creation of relatively small marine reserves affect natural resources and sustainability in the rest of the world's oceans?
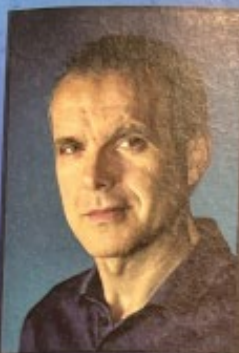
Sala and the Pristine Seas team have completed 31 expeditions between 2009 and early 2020.

Sharks hunt off the Galapagos Islands, where Pristine Seas helped to create the Darwin and Wolf Marine Sanctuary, protecting the highest abundance of sharks known in the world.

## PRISTINE SEAS EXPEDITIONS & PROTECTED AREAS

● Protected area    ● Completed expedition

ARCTIC OCEAN

Franz Josef Land
Russia

Last Ice Area
Canada

EUROPE

ASIA

NORTH AMERICA

Azores
Portugal

Selvagens Islands
Portugal

AFRICA

NORTH PACIFIC OCEAN

NORTH ATLANTIC OCEAN

Revillagigedo Islands
Mexico

Clipperton
France

Osa Peninsula
Costa Rica

Cocos Island
Costa Rica

Palau

Pacific Remote Islands
U.S.

Galápagos Islands
Ecuador

Malpelo
Colombia

Gabon

Seychelles

Southern Line Islands
Kiribati

SOUTH AMERICA

Ascension
U.K.

SOUTH ATLANTIC OCEAN

INDIAN OCEAN

New Caledonia
France

Niue
N.Z.

Pitcairn Islands
U.K.

Desventuradas Islands
Chile

AUSTRALIA

Rapa Iti
France

Southern Mozambique

Salas y Gómez Island
Chile

Juan Fernández Archipelago
Chile

Tristan da Cunha
U.K.

SOUTH PACIFIC OCEAN

Patagonian Fjords
Chile

Banco Burdwood
Argentina

Cape Horn & Diego Ramírez
Chile

Ross Sea

Antarctic Peninsula

Yaganes
Argentina

ANTARCTICA

# THE POWER OF GEOGRAPHY: GEOGRAPHIC THINKING

**CRITICAL VIEWING** Rows of buildings line the Charles River in Boston, Massachusetts, a city that was founded in 1630 along the banks of the river and Boston Harbor. ▮ Explain what geographers today might learn by studying the location of the city of Boston.
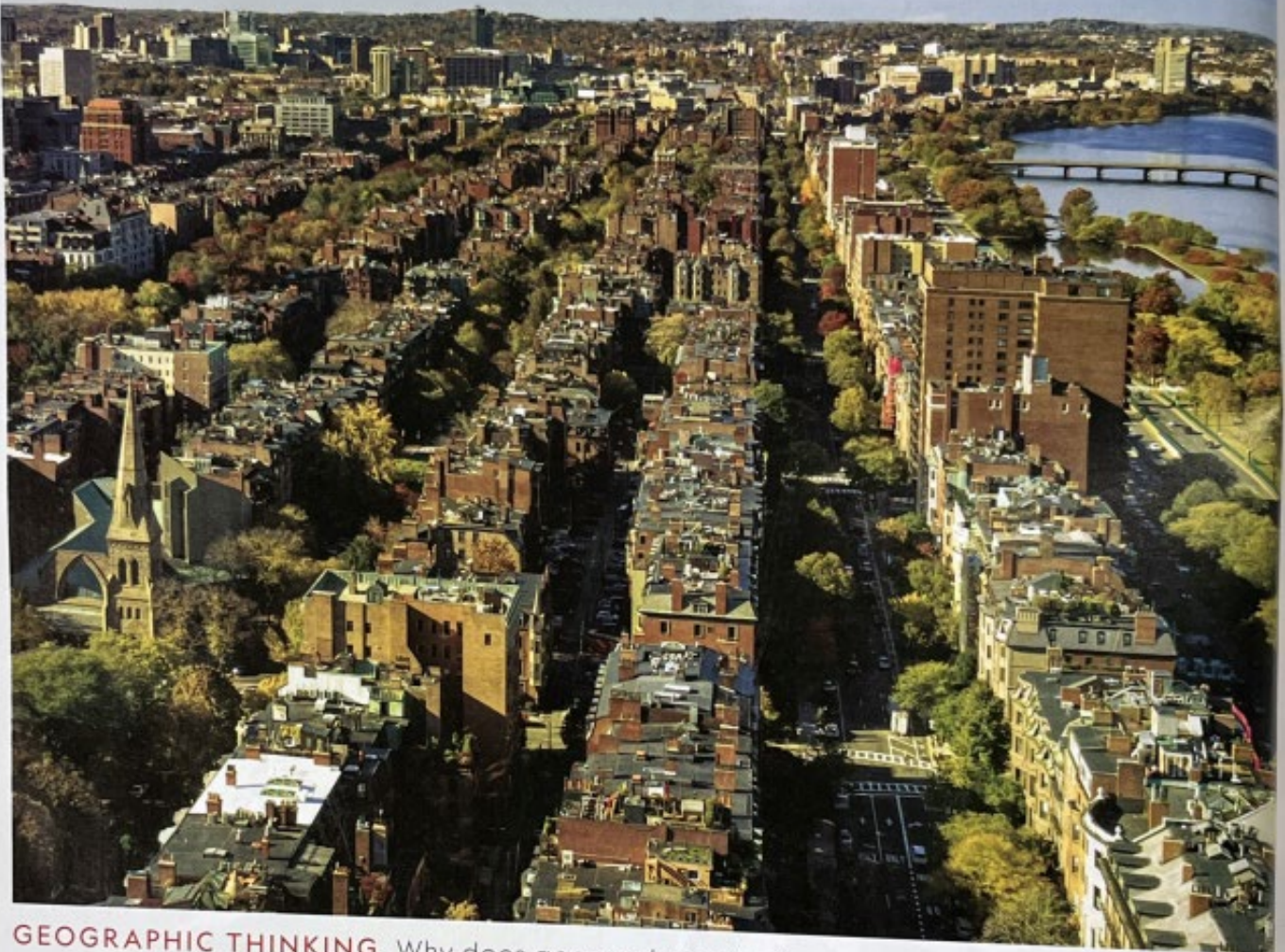
**GEOGRAPHIC THINKING** Why does geography matter?

**1.1**
### WHAT IS HUMAN GEOGRAPHY?

**CASE STUDY:** New Orleans —Site vs. Situation

**NATIONAL GEOGRAPHIC EXPLORER** Adjany Costa

**1.2**
### SPATIAL PATTERNS: SCALE AND REGION

**CASE STUDY:** India—Regional Differences in Scale

**1.3**
### GLOBALIZATION AND SUSTAINABILITY

# 1.1 WHAT IS HUMAN GEOGRAPHY?

Exploring why things are located where they are can offer insights into how human activity shapes the world. Human geographers study the ways in which people use, adapt to, and change Earth, as well as how they are influenced by it. Establishing the concepts and perspectives that inform a human geographer's work will give you a context for the rest of this course.

## STUDYING HUMAN GEOGRAPHY

Whether you're aware of it or not, you are regularly engaged in geographic thinking. The simple act of traveling around your community requires you to know where your destination is, to plan a route, to consider distance and traffic, and to estimate how long your trip will take. When you perform these calculations, you are thinking geographically.

Geography is an integrative discipline that brings together the physical and human dimensions of the world in the study of people, places, and environments. Its subject matter is Earth's surface and the processes—continuous actions taking place over time—that shape it, as well as the relationships between people and environments and the connections between people and places.

The discipline of geography is divided into two major areas. **Physical geography** is the study of natural processes and the distribution of features in the environment, such as landforms, plants, animals, and climate. For example, a physical geographer might focus on the movement of glaciers in different eras, or how a process like erosion changes a riverbed. **Human geography** is the study of the events and processes that have shaped how humans understand, use, and alter Earth. A human geographer studies how people organize themselves socially, politically, and economically and what impact they have on the natural environment.

Because geographers work on many of the same questions and problems as experts in other fields in the physical and social sciences, they face the challenge of differentiating geography from those fields. One distinguishing feature is geographers' focus on the relationship between humans and environments. Other disciplines tend to focus on either one or the other. Geography also recognizes the importance of where events and phenomena occur, focusing on how processes vary depending on location. For instance, a society will develop differently in a rural environment than in an urban setting. A third distinguishing feature is geographers' focus on geographic scales. You'll learn more about the importance of scale later in the chapter.

## GEOGRAPHIC PERSPECTIVES

Both branches of geography analyze complex issues and relationships from two key perspectives, or points of view. These perspectives help geographers interpret and explain spatial patterns and processes on Earth, and understand the complex relationships between nature and human societies.

The **spatial perspective** refers to where something occurs. In the same way that history is concerned with time and the chronological aspects of human life, geography is concerned with the spatial aspects—where things are located and why they are located there. When human geographers take a spatial perspective, they are studying how people live on Earth, how they organize themselves, and why the events of human societies occur where they do.

The second key perspective is the **ecological perspective**, which refers to the relationships between living things and their environments. Looking at an issue from an ecological perspective involves studying the interactive and interdependent relationships among living things, ecosystems, and human societies. This perspective helps explain human societies' dependence on diverse ecosystems for essential resources such as food and water. Taken together, these two perspectives help human geographers understand the complex relationship between humans and environments. The awareness that these and other perspectives exist is fundamental to a geographer's understanding of the world's people and places.

The essential elements of geography can be summed up neatly in the following three questions: Where? Why there? Why care? When geographers apply these questions, they are thinking geographically. Asking where something is located is the starting point for any geographic inquiry. Asking why it is located there pushes geographers to analyze the reasons behind processes and interactions. And asking why someone should care helps them establish the importance and relevance of their inquiries. Certain spatial concepts help geographers answer these questions. These concepts include location, place, space, flows, pattern, distance decay, and time-space compression.

**LOCATION AND PLACE** It should be no surprise by now that where things are found is an important geographic concept. **Location** is the position that a point or object occupies on Earth. Location can be expressed in absolute or relative terms. **Absolute location** is the exact location of an object. It is usually expressed in coordinates of longitude and latitude. The city of Budapest, Hungary, for instance, is located at 47.50° N, 19.04° E. With the proper means of transportation and a Global Positioning System (GPS), you could use these coordinates to get to Budapest from any other location on Earth. **Relative location** is a description of where a place is in relation to other places or features. A geographer might describe Budapest's relative location as 134 miles southeast of Vienna, Austria, or she might say that the city straddles the Danube River in the middle of the Carpathian Basin in north central Hungary.

The term **place** is related to but different from location. A place is a location on Earth that is distinguished by its physical and human characteristics. The physical characteristics of a place include its climate, landforms, soils, water sources, vegetation, and animal life; the human characteristics include its languages, religions, political systems, economic systems, population distribution, architecture, and quality of life.

When people say they feel a strong "sense of place," they are referring to the emotions attached to an area based on their personal experiences. The sense of place that people have for their hometown or certain buildings—a baseball stadium, for example—is stronger than it is for places they don't know, and it is tied to their sense of identity. Because humans create the concept of place in their encounters with the world around them, someone who grew up in Boston may strongly identify with the city or a particular neighborhood within it, just as a person who grew up in Berlin may strongly identify with that city. Their physical surroundings, the people they know, and the culture influence their perceptions. The attachment that Bostonians and Berliners form with their history, architecture, landforms, and people contribute to their identities.

Places change over time. As a society's values, knowledge, resources, and technologies evolve, the people within that society make decisions that alter the place they occupy. Cities grow, construction covers the land, wetlands are filled in, and mountains are mined for resources. Other places might shrink as people move away, and over time disappear altogether. Decisions about how to organize society and how to interact with other places cause changes as well. The relationships between places affect all involved, politically, economically, and culturally. Over a long enough period of time, empires rise and fall, climates change, and society evolves enough to change life significantly for the people who live in a place. If you've visited or seen pictures of cities that have been around for a long time, however, you've probably noticed that elements of the place's history—its original sense of place—usually remain.
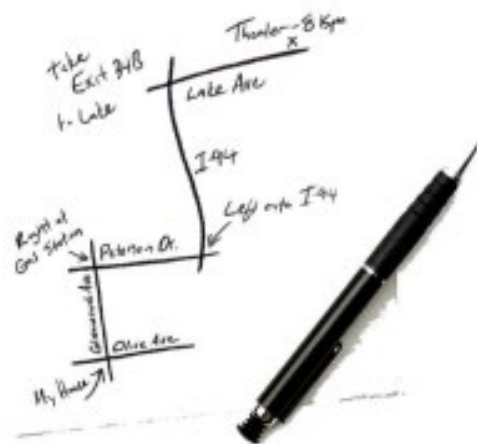


## MENTAL MAPS

If you think about a place you go to regularly, you can probably imagine the route you take to get there. And you can likely draw a reasonably accurate map of your school, neighborhood, or town from memory. These internalized representations of portions of Earth's surface are called **mental maps**. Your mental map of different areas of the world depends on many factors. Your experiences, your age, where you live, and other factors contribute to the accuracy of your mental maps. For instance, what do you picture when you think of New England? How about the South, or the Pacific Northwest? Now compare your mental map to actual maps of these areas. You most likely have a clearer mental map of the area you live in than one that's far away.

Human geographers focus on two factors that influence how humans use a particular place. The first factor is **site**, which refers to a place's absolute location, as well as its physical characteristics, such as the landforms, climate, and resources. The second factor is **situation**, which refers to a place's location in relation to other places or its surrounding features. Situation describes a place's connections to other places, such as transportation routes (like roads, rail lines, and waterways), political associations, and economic and cultural ties.

When describing the site of the Spanish city of Barcelona, a geographer would say it is located on a plain with the Besós River to the north and the Llobregat River to the south. It lies between a rocky outcrop and a semicircle of mountains. It has a mild Mediterranean climate. Barcelona's situation, on the other hand, is that it is a port city on the Mediterranean Sea, which historically controlled the western portion of the sea along with Mallorca and Valencia. And because there are few navigable rivers in the region, Barcelona was well-situated as a major hub on the trade route from France to southeastern Spain.

The street maps of Denver and London illustrate contrasting urban patterns—a city like London that has evolved over a long period of time looks very different from a relatively newer city like Denver. The winding roads of London bear little resemblance to Denver's angular, gridlike layout.

**SPACE, PATTERN, AND FLOW** As you've read, when geographers think geographically, they are considering the arrangement of things in space. Space in this instance refers to the area between two or more things on Earth's surface. Studying the ways in which things are distributed, or arranged within a given space, can help human geographers describe and analyze the organization of people, places, and environments on Earth. Density and pattern are key concepts in the examination of distribution.

Density is the number of things—people, animals, or objects—in a specific area. For example, a geographer might compare the population density of a large city to that of a rural area. Manila, the capital city of the Philippines, has over 171,000 people per square mile. A rural area like the province of Davao del Sur, on the other hand, has about 850 people per square mile. Based on this statistic, what conclusions might a geographer be able to draw about the lives of a person in Manila and a person in Davao del Sur?

Pattern—how things are arranged in a particular space—is another factor of distribution. Depending on how humans settled and developed a place, and what their needs are for it, its features might be arranged in a neat, geometric pattern, or they might be arranged in a pattern that seems more random. Studying the patterns of phenomena in space can help geographers understand different processes, such as patterns of agricultural production, urban settlement, or the distribution of fast-food restaurants in a town. In Unit 5 you'll learn about different types of rural settlement patterns and the reasons why each pattern developed. Patterns can be observed in urban areas as well. Many old cities in Europe, for example, are made up of narrow, winding roads that are inconvenient for car traffic. But Denver, Colorado, was built on a grid system, with streets that intersect at right angles, which makes the city easier to navigate. How might getting around and dealing with traffic patterns differ in London than in Denver?

Obviously, geographers are not studying a world at rest. Any given space changes over time as things move from one place to another. The study of the flow of people, goods, and information and the economic, social, political, and cultural effects of these movements on societies is an important aspect of human geography. You will learn about the flow of people in Chapter 5 on migration, the flow of culture in Chapter 7 on cultural change, and the flow of goods in Chapter 20 on trade.

## HUMAN-ENVIRONMENT INTERACTION

**LEARNING OBJECTIVE**
PSO-1.B Explain how major geographic concepts illustrate spatial relationships.

Regardless of where people live, they depend upon, adapt to, and modify the environment. They make decisions about how to live based on environmental features, and they make changes to the environment as a result of those decisions. Humans have always changed the landscapes they settled—using land for agriculture, tapping into natural resources, and building structures in which to live. But technologies and building techniques have given modern humans the ability to alter their environment in almost unlimited ways. Human geographers study how these changes affect both humans and the environment itself. Their views on the causes and effects of human societies' interactions with the natural environment have evolved over the years.

**THEORIES OF INTERACTION** In the 18th, 19th, and much of the 20th centuries, many geographers subscribed to a theory of human-environment interaction that has since been discredited, largely because some experts believe it inaccurately favors the accomplishments of certain societies over others. This theory—environmental determinism—argues that human behavior is largely controlled by the

A model is a representation of reality that presents significant features or relationships in a generalized form. Models help geographers analyze spatial features, processes, and relationships. One example is the distance decay model. **Distance decay** is a key geographic principle that describes the effect of distance on interactions. The principle states that the farther away one thing is from another, the less interaction the two things will have. Cartographer and geographer Waldo Tobler's first law of geography states that while all things on Earth are related to all other things, the closer things are to one another, the more they are related. Think about an earthquake, flood, or revolution. The closer you are to any of these phenomena, the more you will be affected by it. Distance decay is connected to friction of distance, a concept that states that distance requires time, effort, and cost to overcome. Friction of distance applies to political, religious, and cultural movements as well, but because of modern advancements in technology and transportation, it has less impact today than in the past.

**Time-space compression** is a key geographic principle that is related to friction of distance. It describes the processes causing the relative distance between places to shrink. Modern transportation has greatly reduced travel times, and the internet and other forms of communication have made it easier to communicate with people anywhere on the planet and to send money around the world through online banking

transfers. Through these technologies, humans have effectively caused the distances between places to seem shorter, as they are able to cross those distances more quickly and exchange goods and information more easily. The map below illustrates time-space compression. Why might Europe and North America seem closer together to a person today than they seemed to Columbus?



TRANSATLANTIC TRAVEL TIMES

physical environment. According to the theory, a region's climate and soil fertility dictate how a society develops as it adapts to the environment. Environmental determinism has fallen out of favor, however, because it argued that the environment most suited to human development is that of western Europe and North America. This fails to take into account the fact that civilizations in other regions, such as North Africa and much of Asia, arose earlier than those in Europe and North America and were more advanced technologically and highly influential culturally for long periods of human history.

Modern geographers favor **possibilism**, a theory that argues that humans have more agency, or ability to produce a result, than environmental determinism would suggest. According to possibilism, individuals are active, not passive, agents. The environments in which they live offer individuals opportunities and challenges. Societies react to those opportunities and challenges in different ways depending on the decisions they make, their ingenuity, and the technologies available to them. The environment places some limitations on human activity, but societies have a range of options in deciding how to live within a physical environment. Think about settlements that have grown up in deserts. People divert rivers to irrigate land for agriculture and build dams and aqueducts for drinking water. They build whole cities in places that were once too barren and dry to support human life.

**SUSTAINABILITY** An important concept in thinking about human-environment interaction is **sustainability**, the use of Earth's land and natural resources in ways that ensure they will continue to be available in the future. Sustainable land use requires consideration of whether a particular natural resource is renewable, meaning nature produces it faster than people consume it, or nonrenewable, meaning people consume it faster than nature produces it. Solar and wind energy, for instance, are renewable resources, while coal and other fossil fuels are nonrenewable. The effects of a society's use of natural resources are important to consider as well. For example, what advice do you think a geographer concerned with sustainability might give to a government deciding what laws to pass to fight climate change?

## GEOGRAPHIC THINKING

1. Explain whether the address of a restaurant is an absolute location or a relative location.

2. Describe how geographic concepts help to explain the distribution of phenomena on Earth.

3. Describe how technology "shrinks the world" using the time-space compression model.

4. Compare the theories of environmental determinism and possibilism.

**CRITICAL VIEWING** Lettuce and other produce grows in a garden behind center field at AT&T Park in San Francisco. Restaurants inside the ballpark use produce grown here to serve directly to baseball fans. ▌ Explain how this feature of the ballpark is an example of sustainability.

# NEW ORLEANS—SITE VS. SITUATION

**THE ISSUE** New Orleans's proximity to resources, advantageous natural features, and transportation routes is ideal, but the land upon which it sits offers many challenges.

**LEARNING OBJECTIVES**

PSO-1.B Explain how major geographic concepts illustrate spatial relationships.

PSO-6.A Explain the processes that initiate and drive urbanization and suburbanization.

**BY THE NUMBERS**

## 50%
of New Orleans is at or below sea level

## 454,845
Population pre-Katrina

## 391,006
2018 population

Source: The Atlantic, United States Census Bureau

**IN THE EARLY 18TH CENTURY**, the French colonists who settled Louisiana needed a location for the colony's capital. They considered a variety of sites—some inland and some on the coast. After much consideration, they decided on an option that was slightly inland, on the Mississippi River. This would become the site of the city of New Orleans. Centuries later, residents of the city and the country are still grappling with the choice the original settlers made.

They knew the site wasn't ideal. Located on a sharp bend on the east bank of the Mississippi River, at the head of the delta leading to the Gulf of Mexico, and just south of Lake Pontchartrain, New Orleans floods easily and regularly and is subject to severe storms from the Gulf of Mexico. However, the city's situation was perfect. Its location at the southern end of the Mississippi meant that New Orleans would be connected to a huge area of the lands to the north. The Mississippi is the largest river system on the continent and has river links to two-thirds of the continental United States. Much of the continent's commerce traveled down the river right past the city. The city's founders decided that the advantages of the situation outweighed the disadvantages of the site. The city's situation is still valuable today—because of its location at the mouth of the Mississippi and its access to the Gulf of Mexico, New Orleans remains one of the busiest ports in the United States.

In order to deal with the site disadvantages, the city's early residents built artificial levees, or embankments, to keep the river from flooding the streets, and in the mid-1800s engineers figured out how to drain the wetlands between the river and Lake Pontchartrain, allowing the city's borders to spread out into low-lying terrain. Today roughly 50 percent of the city lies below sea level, a shallow bowl surrounded by more modern—but certainly not perfect—levees to keep the water out.

The imperfections of those levees were revealed in late August 2005, when Katrina, a destructive and deadly hurricane, slammed into New Orleans. The ten inches of rain that Katrina dumped, combined with a devastating storm surge, overwhelmed the levees that held back the waters of Lake Pontchartrain and nearby Lake Borgne. After the levees failed, water poured into the city, eventually flooding 80 percent of its land.

More than a million people evacuated the region before the storm, but tens of thousands remained because they could not or would not leave. Thousands of stranded residents took shelter at the Louisiana Superdome and the New Orleans Convention Center, but a lack of food and drinkable water and absence of sanitation created a public health emergency.

By September 6, the city had been almost completely evacuated, and fewer than 10,000 people remained. Much of the city was eventually rebuilt, and some of the displaced returned, but the population today remains lower than it was when Katrina struck. ∎

## GEOGRAPHIC THINKING

Explain why New Orleans's founders decided that the advantages of the location's situation outweighed the disadvantages of its site.

Floodwaters flow over a failed levee along the Inner Harbor Navigation Canal near downtown New Orleans following Hurricane Katrina, while a trapped resident waves a white flag for help. A major flaw of New Orleans's site is found in its low-lying land along Lake Pontchartrain and the Mississippi River. Massive flooding devastated the region after Hurricane Katrina struck in 2005.



NEW ORLEANS'S SITUATION

Cincinnati

St. Louis

*Ohio R.*

Nashville

*Arkansas R.*

Memphis

Little Rock

*Mississippi R.*

Baton Rouge

New Orleans

0    100    200 miles
0    100    200 kilometers

Though the site of New Orleans is far from ideal—an area prone to flooding and susceptible to strong storms—the city's situation was perfect when it was founded in the early 1700s. The maps highlight New Orleans's proximity to cities along the Mississippi River, as well as to the Gulf of Mexico.



NEW ORLEANS'S SITE

Lake Pontchartrain

*Mississippi R.*

New Orleans

Mississippi River Delta

Gulf of Mexico

0    15    30 miles
0    15    30 kilometers

Costa and her team are collecting scientific data that will be used to develop strategies to protect the Okavango River Basin and ensure sustainability.

NATIONAL GEOGRAPHIC EXPLORER **ADJANY COSTA**

# CONSERVING THE DELTA

As climate change worsens and world population grows, sustainability becomes an ever more important topic in human geography. It is also a major concern of biologist Adjany Costa, the assistant director for National Geographic's Okavango Wilderness Project. Costa feels that the most effective human-environment interaction is to have as little impact on the environment as possible.

The Okavango River Basin is the largest freshwater wetland in southern Africa and provides water for a million people. Its delta in northern Botswana is rich with biodiversity and is home to the world's largest remaining elephant population, plus lions, cheetahs, wild dogs, and hundreds of species of birds.

Costa is a member of a team of scientists who have embarked on a series of canoe and mountain bike expeditions into the least known, most inaccessible areas of the watershed. As Costa explains, the basin's situation—its relationship with the surrounding areas—informs her work: "It's adjacent to a protected area in Namibia and two national parks, so it would create this whole square of conservation of land and ocean that are independent of each other but can still work together in regards to conservation."

In addition to research, another major part of Costa's job is advocacy and education. She meets with community leaders to educate them about the benefits of conserving the basin. The ultimate goal of the team's work is to help establish a sustainable management plan that will protect the Okavango watershed's source rivers forever. ▮

## GEOGRAPHIC THINKING

Identify and explain the reasons why it is important to sustain the Okavango River Basin.

# 1.2 SPATIAL PATTERNS: SCALE AND REGION

Human geographers examine issues from different angles. They might get a broad overview of the effects of a process on a large area and then move on to study how the same process affects a small space. They group areas together into cohesive units to identify and organize the space they study. These tools help them interpret Earth's complexity.

## ZOOMING IN AND OUT

Think about an issue being covered in the news today. Is it a local, regional, national, or global issue? When answering a question like this, you are taking **scale** into account. This concept is different from scale on a map, which tells you how distance on the map compares to distance on the ground. Scale here refers to the area of the world being studied. Geographers use different scales of analysis as a framework for understanding how events and processes influence one another. For instance, a geographer might study the effects of air pollution in a city's industrial region, in the entire city, or in the country as a whole. Examining the effects of pollution at these different scales of analysis can help geographers gain a better understanding of the impacts of atmospheric processes on pollution.
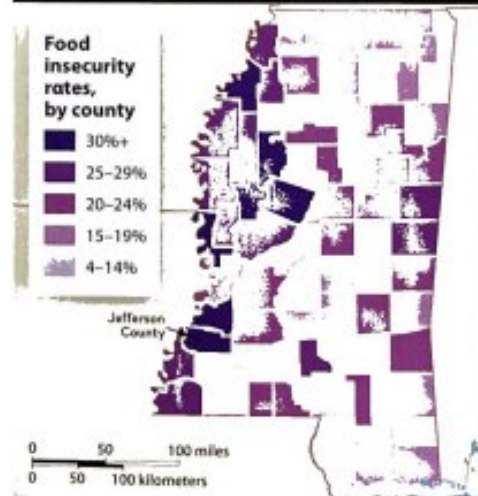
The U.S. and Mississippi food insecurity maps reveal that on a national scale, about 12.5 percent of the U.S. population struggles to put food on the table. Examining the issue at a more local scale, however, it becomes clear that the problem is more serious in certain areas of the country. At the state level, Alabama, Arkansas, Louisiana, and Mississippi have food insecurity rates between 17 and 19.9 percent. Focusing on the county level reveals that in several counties in Mississippi, more than 30 percent of the population suffers from food insecurity. At an even more local level, Issaquena County in western Mississippi does not have a single grocery store, which means that many residents buy much of their food day-to-day at local convenience stores. With limited access to fresh foods,

## SCALES OF ANALYSIS: FOOD INSECURITY IN THE UNITED STATES



**Food insecurity rates, by state**
- 17–19.9%
- 14–16.9%
- 11–13.9%
- 7–10.9%

## FOOD INSECURITY: MISSISSIPPI



**Food insecurity rates, by county**
- 30%+
- 25–29%
- 20–24%
- 15–19%
- 4–14%
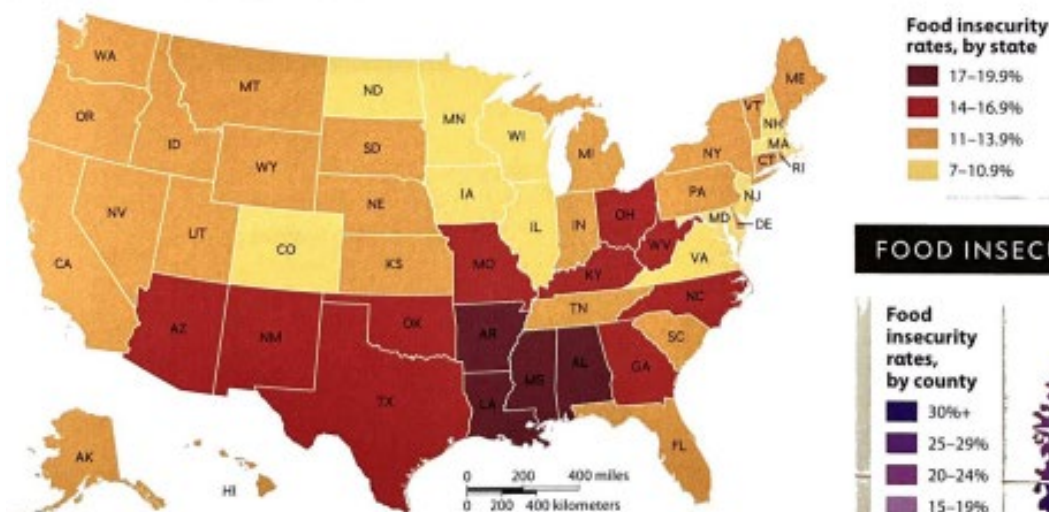
**READING MAPS** The maps show food insecurity rates on a national scale and a local scale. The shading on the U.S. map reveals that the percentage of people who struggle with hunger is higher in certain areas of the country, such as the Southeast. Focusing on the county level in the Mississippi map reveals some of the highest rates of food insecurity in the nation. ▌ Explain what using different scales of analysis reveals about food insecurity in the United States.

some end up eating less healthy, processed convenience food rather than food with higher nutritional value. What happens at one scale affects processes at other scales, and data at different scales is necessary to fully understand issues such as food insecurity.

Observations at a local scale can also reveal details that might not be apparent at a regional scale. For instance, at the regional scale, an analysis of the population of New England reveals that 76.7 percent of the population is White, 9.6 percent is Hispanic, and 6.6 percent is African-American. Looking at the issue at a more local scale, however, reveals that Suffolk County, where Boston is located, is much more diverse, at 46.1 percent White, 19.3 percent Hispanic, and 22.5 percent African-American. In short, looking at diversity at a regional scale, New England is one of the least diverse regions in the United States. But when they look at diversity at a local scale focused on Suffolk County, geographers find a very different—and much more diverse—picture. It is important to note that scale can obscure actual spatial patterns. Suffolk may be a diverse county, but as geographers drill down even further, they find that the countywide diversity does not apply to all Boston neighborhoods. The city is actually quite segregated. Some neighborhoods are more than 80 percent White, others are more than 80 percent African-American, and still others are more than 65 percent Hispanic.

Geographers' understanding of scale drives their research questions and data collection, and their findings then inform policy makers, hopefully to make better decisions. An issue that has a major effect on the planet, such as climate change, can be more fully understood by analyzing it at a variety of scales. For instance, scientists have determined that, globally, the planet is warming. As they drill down to a regional scale, however, the impacts differ depending on a variety of factors. Canada's Arctic region is warming at twice the global rate, potentially causing heat waves across the country and increasing risk of wildfires and drought.

In regions where climate change is occurring more slowly, its effects are more subtle. Additionally, sea level rise is not occurring uniformly across the planet. In certain regions, such as the Eastern Seaboard of the United States and in the Gulf of Mexico, sea levels have risen at higher than average rates. In other regions, like the U.S. West Coast and the oceans around Antarctica, sea levels have risen at lower than average rates. Understanding that the impacts of climate change will not be uniform helps governments prepare for problems that specifically affect their areas.

## GEOGRAPHIC THINKING

1. Explain how using different scales of analysis helps geographers and other scientists understand the ways climate change is affecting the planet.

2. Describe how the analysis of the population of New England differs at a regional and local scale.

## UNIFYING FEATURES

A **region** is an area of Earth's surface with certain characteristics that make it distinct from other areas. Regions are human constructs, meaning people decide how they appear. The boundaries between regions are typically not clearly defined and are often transitional, overlapping, and contested. In other words, regional boundaries can be fuzzy. For instance, the United States' Southwest is thought of as one distinct region, and El Norte (The North) in Mexico is also considered to be its own region, but because of the consistency with which the people and cultures cross the border, in some ways it is a single region. This is evident in the cities of El Paso, Texas, and Ciudad Juárez, Mexico, which share a regional economy where cultures and traditions blend and people cross the border, back and forth, on a regular basis.

Regions are a valuable tool for human geographers because they serve as an organizing technique for framing detailed knowledge of the world and for asking geographic questions. They are effective comparison tools as well. Knowing about the features of different regions is useful in discussing similarities and differences between parts of the world. Regions can be of any size, and they can act as a scale of analysis between the local, the national, and the global, helping geographers to synthesize their understanding of the world. Geographers define three types of regions based on the features that an area shares.



FORMAL REGION: THE PAMPAS
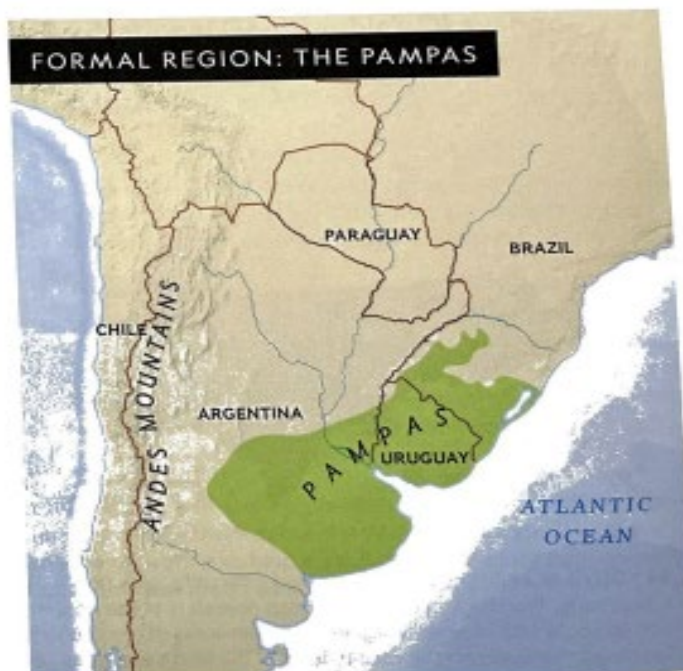
The Pampas of South America are grasslands that cover an area of 300,000 square miles. The region is defined by its moderate climate and is one of the richest grazing areas in the world.

**FORMAL REGION** A formal region is an area that has one or more shared traits. It is also referred to as a uniform region. The shared trait can be physical, such as a landform like a mountain range or a climate area like a desert. It can be cultural, such as a language or religion. Or it can be a combination of traits, defined by data such as measures of population, income, ethnicity, or precipitation. For instance, a country is a formal political region whose shared characteristics include its government, laws, services, and taxes. A smaller example of a formal political region is a state or a province within a country. The continent of Africa, with its distinct boundaries, is a formal region as well.

The Rocky Mountains make up a formal physical region in the United States, as do the Great Plains. The Pampas region of South America, shown on the "The Pampas" map, is defined by its moderate climate. Formal regions can also be defined by their agricultural growing season, such as temperate regions, which have long growing seasons. The corn belt, an area of the Midwest United States where corn and soybeans are the dominant crops, is a formal economic and agricultural region. The Pyrenees Mountains create a formal region along the French-Spanish border in Western Europe. People in this rugged region have developed their own culture over thousands of years.

At a more local scale, a city qualifies as a formal region as well. And within cities, shared traits can define small formal regions. The ethnic neighborhoods found in many large cities, for instance, may be considered formal regions. In the borough of Brooklyn in New York City, a large number of Hasidic Orthodox Jews live in the neighborhoods of Crown Heights, Williamsburg, and Borough Park. These neighborhoods form a region shaped by a shared religion and culture.

**FUNCTIONAL REGION** A functional region is defined as an area organized by its function around a focal point, or the center of an interest or activity. The focal point of a functional region is called a node. The node is the focus of the region, such as the downtown of a city. Nodes serve a particular function—often a political, social, or economic purpose—and have internal connections that tie the region together. For instance, the central business districts of some cities form the focal point for the cities' economic activity. Workers commute to this district, usually downtown, along the internal connections of roads and rail lines from other areas of the city, or from the suburbs, the residential areas surrounding a city. The central business district acts as the node for the functional region that consists of the metropolitan area.

Functional regions exist at a range of scales and can apply to a variety of geographic activities. The "Airline Flight Routes" map shows the functional region created by a major airline's flights from the Hartsfield-Jackson Atlanta International Airport to locations throughout the Americas. The airport acts as the region's node—a major hub for



FUNCTIONAL REGION: AIRLINE FLIGHT ROUTES

Delta Airlines flies to cities throughout the Americas from the Hartsfield-Jackson Atlanta International Airport. These cities form a functional region with the airport as the node.



FUNCTIONAL REGION: D.C. METRO SYSTEM

The Metrorail system connects Washington, D.C., to its surrounding suburbs. L'Enfant Plaza and Metro Center serve as nodes from which six color-coded lines branch off.

## PERCEPTUAL REGION: THE MIDWEST

The Midwest is a perceptual region comprising 12 states. It is defined in part by people's perceptions of the region—for example, as a largely rural area with a friendly population.

perceptions of the area—that is, their subjective understanding of the world as influenced by their culture and experience. What are the characteristics that make up the Midwest region of the United States, for example? Most people think about farms—especially corn and dairy products—and polite, down-to-earth people. The Midwest is generally not thought to be very ethnically or racially diverse, and politicians and pundits sometimes belittle it as "flyover country," meaning that it's nothing but a place you fly over to get from one coast to another. Each of these characteristics influence people's perceptions of the Midwest.

People often disagree on the boundaries of perceptual regions. Someone from the East Coast might perceive the Midwest to include Ohio, Indiana, Michigan, and parts of Pennsylvania, but people living in Minnesota, Wisconsin, or Kansas might feel strongly that they're Midwesterners. And while these regions may help to impose a personal sense of order and structure on the world, they often do so on the basis of stereotypes that may be inappropriate or incorrect. The Midwest does have large swaths of rural areas, for example, but it also contains large, diverse cities.

Outside of the United States, Eastern Europe is an example of a perceptual region. According to the United Nations, Eastern Europe consists of 23 countries including the Czech Republic, Poland, Romania, Russia, and the countries of the Balkan Peninsula. But the region exists in most people's minds based on its political, historical, and cultural characteristics. The area makes up most of what was known as the Eastern Bloc during the Cold War—the countries that were ruled by Communist governments in the years after World War II. Culturally and historically, the region was influenced by several empires. Together these characteristics define a region that exists separately in people's perceptions from Western Europe.

national and international flights. All flights from some smaller airports in the U.S. South go through Hartsfield-Jackson, making it the only connecting point for air travel between these locations.

The hub-and-spoke design of many public transportation systems form functional regions as well. The hub at the center of the system is a node, at which a great deal of economic or cultural activity occurs. From there, rail lines branch off toward the suburbs. An example is the rapid transit system of Washington, D.C., depicted in the "D.C. Metro System" map, which has six rail lines that connect the outskirts of the city to the city center.

Cities with ports, or large commercial shipping facilities, form functional regions with their surrounding areas, called hinterlands. The ports act as nodes of these regions. Goods come in on ships and are distributed to the appropriate processing plants and shipping centers in the hinterlands. At these facilities, goods are received, produced, processed, and shipped out, either through the port or into the interior of the country.

A more local example of a functional region is the service area of a pizza shop. At the node is the shop, which might limit its delivery range to a two-mile radius. The edge of the service area is the limit of the pizza shop's functional region.

**PERCEPTUAL REGION** A perceptual region, also called a vernacular region, is a type of region that reflects people's feelings and attitudes about a place. A perceptual region, therefore, is defined by people's

## GEOGRAPHIC THINKING

3. Quebec is a province in Canada in which 83 percent of the population speaks French as a first language. Identify Quebec's region type.

4. Compare the functional region of a pharmacy in a dense city with few drivers to the functional region of a pharmacy in a sparsely populated suburb.

5. Describe the role that cuisine, or style of food, might play in the understanding of a vernacular region.

# INDIA— REGIONAL DIFFERENCES IN SCALE

**THE ISSUE** India has experienced impressive economic growth this century, but large portions of its population aren't experiencing a fair share of the benefits.

## BY THE NUMBERS

### $452.7 BILLION
GDP in 2000

### 2.6 TRILLION
GDP in 2017

### 25%
Poverty rate in rural areas

Source. World Bank



The contrast between poverty and wealth is evident in Mumbai, India, where skyscrapers rise behind an informal housing settlement on the city's outskirts.

**SINCE THE TURN OF THE 21ST CENTURY**, India has experienced astonishing economic growth, seeing its gross domestic product (GDP) increase from $452.7 billion in 2000 to 2.6 trillion in 2017, a 474 percent increase in the size of its economy. To put that into perspective, the U.S. economy has grown by 88 percent during the same timeframe.

However, as geographers focus on more local scales of analysis, they find that this new wealth is not distributed evenly throughout the country. Indians in some regions have become very rich, while many parts of the country remain very poor. Much of the wealth is concentrated in just a handful of states, such as Maharashtra, Kerala, and Tamil Nadu. Since economic growth began to accelerate in India 20 years ago, the wealth divide between certain regions has continued to expand.

Before the acceleration of economic growth, incomes between different states were converging. Since the acceleration, incomes have diverged, with the average person in the three richest states having three times more wealth than the average person in the three poorest states. Looking at patterns within states reveals a rural-urban divide—a large proportion of the new wealth is being generated in cities like Mumbai and Delhi. Mumbai, a port city located on the Arabian Sea in southwestern India, is considered to be the financial and commercial center of India. The country's central bank is located in Mumbai, as is a government-owned life insurance corporation, investment institutions, and the Bombay Stock Exchange. In addition to its robust service sector, the economy of Delhi, which is where the country's capital is located, has created many jobs in trade, finance, public administration, and professional services.

In the less wealthy regions of India, fewer people are living in abject poverty, but the growing wealth divide concerns geographers. Most of the country's wealth—77 percent of the total national wealth—is held by just 10 percent of the population. Many accusations of corrupt dealings between India's politicians and the rich have been made, giving rise to anger and protests among the less wealthy. Without political reforms to fight corruption and expand social services to people who are being left behind, geographers worry the problems will continue to get worse. ∎

## GEOGRAPHIC THINKING

Explain why geographers might have concerns about growing inequality in India.

# 1.3 GLOBALIZATION AND SUSTAINABILITY

Time-space compression describes how technology is causing people around the globe to become more connected—able to interact with and travel to far-off locations faster than ever before. Human geographers study how this process is changing the world, in ways both positive and negative, and consider how the needs of human societies today can be met without using up resources that will be needed in the future.

## GLOBAL VS. LOCAL

Over the past half century, the nations of the world have become increasingly connected and integrated through **globalization**, the expansion of economic, cultural, and political processes on a worldwide scale. Globalization is an important, overarching theme in human geography. A number of factors have contributed to globalization. Lower production costs and advances in transportation technology have expanded many companies' reach outside of the borders of their home country. The internet gives people in different countries the ability to easily communicate with one another, allowing for the spread of cultural ideas faster than ever before. Social media apps allow people to share their views instantaneously, becoming instrumental in the spread of political movements such as the Arab Spring, a series of pro-democracy protests that took place in Southwest Asia (also referred to as the Middle East) and North Africa in 2011.

Government policies have played an essential role in globalization as well. Trade deals throughout the world have lifted restrictions and made the movement of goods and jobs across borders happen more easily. Beginning in 1994, for instance, the North American Free Trade Agreement (NAFTA) allowed companies in the United States, Canada,



TRANSPORTATION AND COMMUNICATION NETWORKS, 2016

— High-speed rail lines
— Major rail lines
— Roads
— Telecommunication cables

0    1,500    3,000 miles
0    1,500    3,000 kilometers
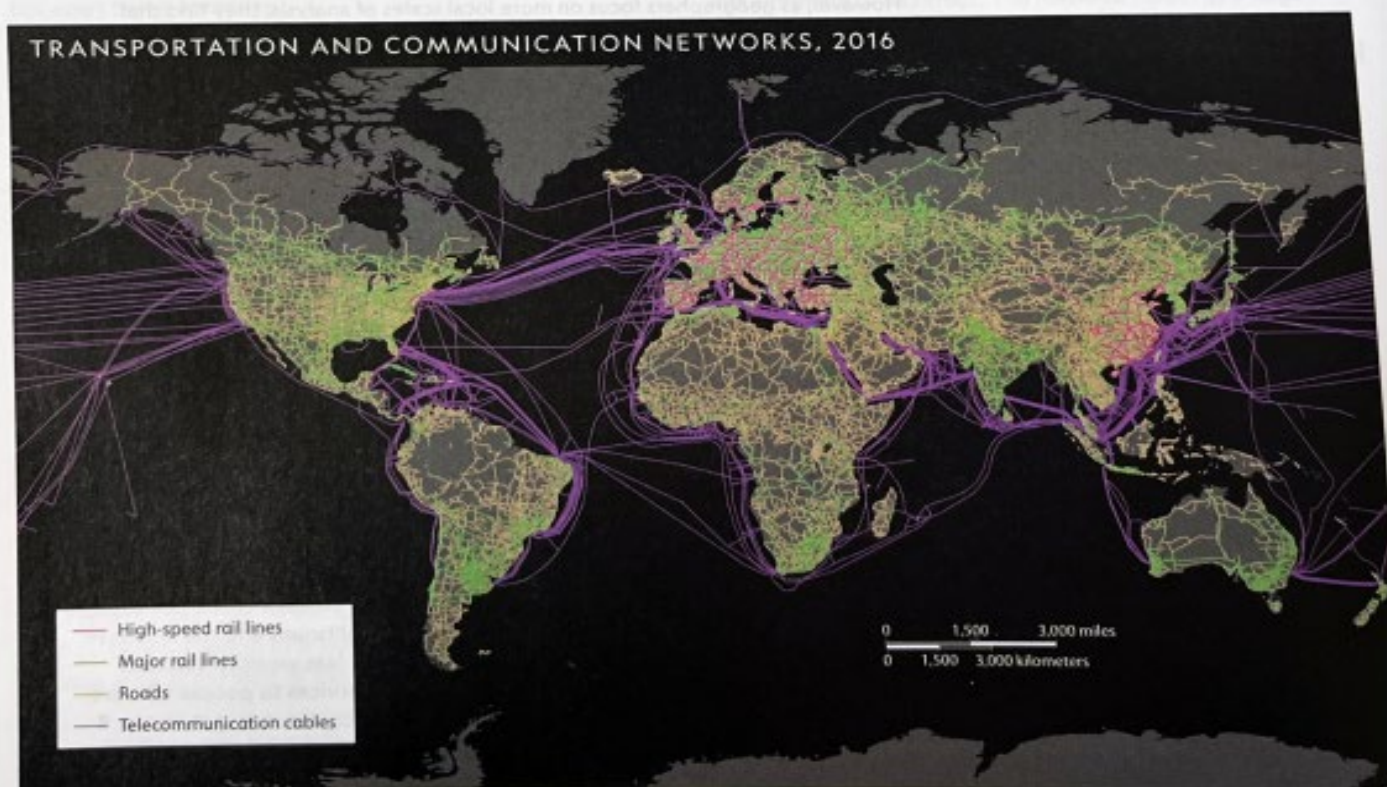
**READING MAPS** The map highlights ways in which locations in the world have become increasingly interconnected by transportation and communication networks. ▌ Choose two locations on the map and describe the connections between them.

and Mexico to sell goods and hire workers in any of the three countries. In 2018, the countries renegotiated NAFTA and drafted a similar pact called the U.S.-Mexico-Canada Agreement (USMCA). In Europe, the European Union (EU) formed in 1993, in part to allow people and goods to easily pass from country to country. International trade has had detractors in recent years—the Trump administration in the United States imposed tariffs on China and other countries starting in 2018, for example—but the overall trend since World War II has been toward more international trade, and this trend has completely reshaped the global economy.

Globalization is a process that affects all aspects of human life today. It is related to the geographic concepts of location, space, place, and flows, and human geographers study the influence that it has on the patterns they observe. As you study each unit in this course, think about the advantages, challenges, and issues surrounding globalization.

## WALLERSTEIN'S WORLD SYSTEM THEORY

Throughout your study of human geography, you'll come across tools that can help you understand geographic concepts. A theory is a system of ideas intended to explain certain phenomena. In the 1970s, sociologist Immanuel Wallerstein developed the world system theory to describe the spatial and functional relationships between countries in the world economy. The theory helps to explain the history of uneven economic development among countries and the reasons why certain regions have held onto political and economic power over long periods of time. It is based on the idea that interdependence between countries has created a world system with an economy that is a single entity with a single market and division of labor. In other words, companies are not limited to selling or hiring within the borders of the country in which they're located. They can open factories and sell products around the world.

World system theory categorizes countries into a three-tiered structure: core, periphery, and semi-periphery. Wealthier countries with higher education levels and more advanced technology are considered part of the core. Core countries are highly interconnected, with good transportation and communication networks and infrastructure that supports economic activity. They have stable governments and strong political alliances. Core countries are economically (and thus politically) dominant, and they control the global market. Countries that have less wealth, lower education levels, and less sophisticated technology are considered part of the periphery. Peripheral countries tend to have less stable governments and poorer services such as health care. They are less connected than core countries, with inferior transportation networks and inadequate infrastructure for supporting economic activity. Countries where both core and periphery processes occur are labeled semi-periphery. Semi-peripheral countries are in the process of industrializing. They are often active in manufacturing and the exporting of goods. They have better connections than peripheral countries, with better transportation and communication networks. Semi-peripheral countries have the potential to grow into core countries.

World system theory states that the three types of countries form a power hierarchy, with core at the top, periphery at the bottom, and semi-periphery in between. The strong central governments, trade partnerships, and skilled labor of core countries allow them to control and benefit from the world economy. They exploit peripheral countries for cheap labor and natural resources. The weaker, less stable governments and poor infrastructure of peripheral countries mean they have little power outside their borders. Semi-peripheral countries act as an economic and political link between the core and the periphery. They can be exploited by core countries but might exploit peripheral countries.

Because of this exploitation, it is difficult for peripheral countries to improve their situation. Historically, the colonial powers of Europe in the 17th, 18th, and 19th centuries were core countries. They exploited their colonies, which were part of the periphery, for crops, labor, and raw materials. Many of the colonizers of this period have remained core countries to the present day.

The core-periphery model doesn't only apply at the global scale. It can also be observed at the national, regional, state, and city level. For instance, while the United States is a core country, core characteristics are not distributed evenly throughout. A state like California is known for its wealthy cities and innovative tech-driven economy, but also has much poorer rural areas. New York City has core areas like Manhattan, where the real estate and financial sectors generate significant amounts of wealth, as well as peripheral areas like the Bronx, which is far less wealthy, with an economy driven by retail, hospitality, and service industries.
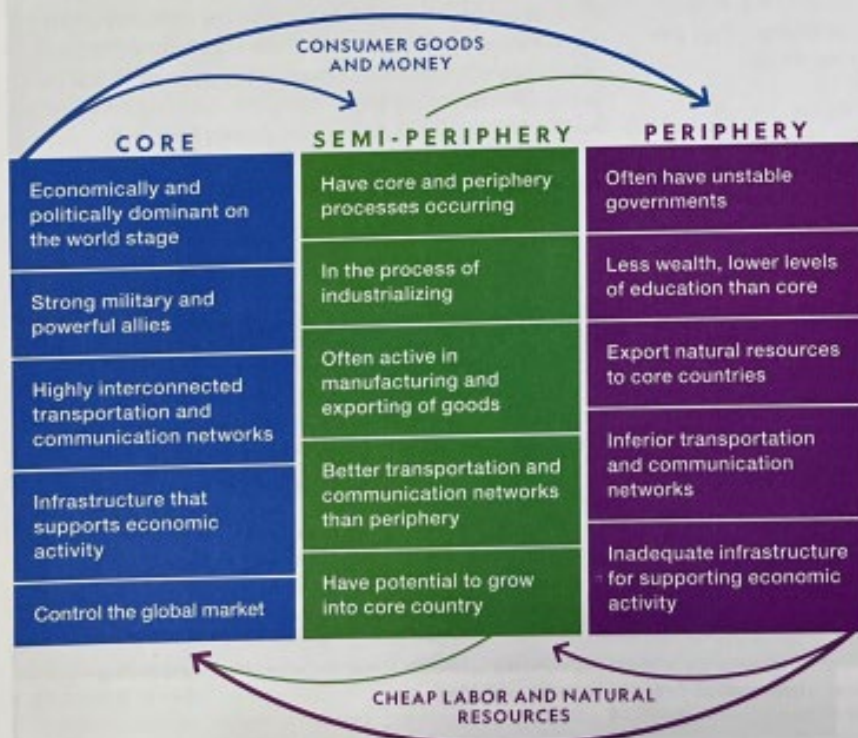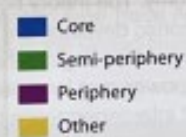
## CORE-PERIPHERY TERMINOLOGY

For decades, geographers have used terms to describe the differences among global economies. You may be familiar with the term *developed countries*, which is sometimes used to describe industrialized countries with strong economies, and *developing countries*, sometimes used to describe less industrialized countries with weaker economies. Those terms became a common way to divide the world beginning in the 1950s. However, critics argue that this terminology is problematic for several reasons, including its focus on economic growth and its assumption that developing or traditional societies need to "catch up" to Western ideals. Instead, the terminology of the core-periphery model is used throughout this course to describe global differences. Using core-periphery terminology helps to distinguish the status and hierarchy of the world's diverse countries. It also helps to better illustrate the relationships that exist between countries.

# WORLD SYSTEM THEORY

At the top of the hierarchy, core countries control and benefit from the world economy. Peripheral countries are exploited for cheap labor and natural resources. Semi-peripheral countries act as a political and economic link between the two. ▌ Explain how core countries are connected economically to periphery countries.

**Legend:**
- Core (blue)
- Semi-periphery (green)
- Periphery (purple)
- Other (yellow)

**CONSUMER GOODS AND MONEY** →

| CORE | SEMI-PERIPHERY | PERIPHERY |
|---|---|---|
| Economically and politically dominant on the world stage | Have core and periphery processes occurring | Often have unstable governments |
| Strong military and powerful allies | In the process of industrializing | Less wealth, lower levels of education than core |
| Highly interconnected transportation and communication networks | Often active in manufacturing and exporting of goods | Export natural resources to core countries |
| Infrastructure that supports economic activity | Better transportation and communication networks than periphery | Inferior transportation and communication networks |
| Control the global market | Have potential to grow into core country | Inadequate infrastructure for supporting economic activity |

← **CHEAP LABOR AND NATURAL RESOURCES**

**CORE COUNTRIES** include Western Europe [A] and most of North America [B], along with Japan [C], Australia [D], and New Zealand [E].

China [F] has the world's second-largest economy, but its per capita income ranks 71st and the country is considered part of the **SEMI-PERIPHERY**.

Many countries that were colonized in the 17th, 18th, and 19th centuries are today part of the **PERIPHERY**.

Water is distributed to residents in the city of Bouaké in the Ivory Coast in West Africa after the lake that provided water to 70 percent of the city's population dried up. Organizations work to come up with sustainable solutions to prevent the depletion of essential resources.

## SUSTAINABILITY

### LEARNING OBJECTIVE
PSO-1.B Explain how major geographic concepts illustrate spatial relationships.

The study of the impact that human societies have on nature is important to the field of human geography. Whether that impact is sustainable is essential to the survival of humanity. Sustainability, as you've read, is the use of natural resources in such a way that they will not be irreversibly depleted. Like globalization, sustainability is an essential theme of human geography, related to the geographic perspectives and key concepts to which you've been introduced. Geographers study sustainability and sustainable practices, and promote the idea that sustainability should drive decisions about how humans react to and influence other geographic processes.

Globalization and economic expansion have made the world more connected, but the advantages have disproportionately gone to core countries. Climate change, depletion of the world's resources, and wealth inequality are worldwide problems that continue to grow. To help people face these challenges and to save the planet from the ravages of climate change, global leaders are taking steps to encourage governments and industries to operate and grow more sustainably. In 2015, the United Nations launched its 2030 Agenda for Sustainable Development, a plan that lays out 17 goals to increase peace, freedom, and prosperity around the world. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability requires consideration of the availability of natural resources, innovations to make better use of renewable resources, and efforts to reduce pollution and waste, but it's also important to ensure that these goals are spread across core, peripheral, and semi-peripheral countries. The UN's goals also include the elimination of poverty and hunger, increased access to quality education, and gender equality.

You'll learn more about these goals in Unit 7, but like globalization, sustainability is an idea that is important to all aspects of human geography. It is a theme that drives much of the work that human geographers do. As you go through this course and learn the ways in which humans are impacting their environments—whether through agriculture, economic development, political or cultural activity, in rural or urban settings—keep sustainability in mind.

## GEOGRAPHIC THINKING

1. Explain why it might be difficult for a peripheral country to become a part of the core.

2. Describe how world system theory is related to globalization.

3. Explain why sustainability is an important human geography theme.

## CHAPTER SUMMARY

Geography can be divided into two major areas: physical geography and human geography. Physical geography is the study of natural processes and the resulting distribution of features in the environment. Human geography is the study of the processes that have shaped how humans understand, use, and alter Earth's surface.

- Spatial patterns refer to the arrangement and placement of objects and events on Earth's surface.

- Geographers analyze complex issues and relationships from two key perspectives: the spatial perspective and the ecological perspective.

- Human geographers use spatial concepts to study how humans interact with the environment: absolute and relative location, place, space, flows, patterns, distribution, distance, time-space compression, and distance decay.

Geographers study events at different scales as a framework for understanding how processes influence one another. A region is an area of Earth's surface with shared characteristics that make it distinct from other areas.

- Scales of analysis include global, regional, national, subnational, and local.

- Geographers use different scales to reveal details that might not be apparent at one scale.

- Regions are human constructs with subjective boundaries.

- A formal region is an area that has shared physical or cultural traits, such as landforms or language.

- A functional region is an area organized around a connection or focal point, such as a river system or a port and its surrounding hinterlands.

- A perceptual region, or vernacular region, is a type of region based on people's understandings of places and mental maps, such as the boundaries of the Midwest.

Over the past half century, globalization has created an increasingly connected and integrated world. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

- World system theory explains the way globalization functions in practice. It categorizes countries into three tiers: core, periphery, and semi-periphery. Core countries have wealth, high education levels, and advanced technology. Peripheral countries have less wealth, low education levels, and less developed technology. Semi-peripheral countries have a mix of core and periphery characteristics.

- Sustainable growth has become a challenge as economic expansion and globalization have increased.

## KEY TERMS AND CONCEPTS

Use complete sentences to answer the questions.

1. **APPLY CONCEPTUAL VOCABULARY** Consider the terms *place* and *region*. Write a standard dictionary definition of each term. Then provide a conceptual definition—an explanation of how each term is used in the context of this chapter.

2. Describe the absolute location of your town or city. Then describe the relative location of your town or city.

3. Explain how the terms *site* and *situation* are related.

4. Describe the spatial perspective using the terms *space* and *distribution*.

5. How are the concepts of *time-space compression* and *distance decay* related?

6. Use the city of Las Vegas, Nevada, which was built in a desert, as an example to explain the theories of environmental determinism and possibilism.

7. How can conducting an analysis at different scales be informative?

8. Describe a technological advancement that has contributed to globalization and explain how it has had an impact.

9. Explain how ethnic or racial diversity can differ at different scales of analysis.

10. Define the concept of *sustainability* and explain why it has become a growing challenge.

11. Compare the terms *node* and *functional region*. How are the terms related?

12. Define the term *perceptual region* and provide an example.

Study the map and caption and then answer the following questions.

NEW YORK AND PHILADELPHIA MEDIA MARKETS



**13. IDENTIFY DATA & INFORMATION** Identify the type of region represented in this map. How do you know?

**14. ANALYZE VISUALS** Describe how the two media markets might have an impact on daily life in South Jersey and North Jersey.

**15. ANALYZE GEOGRAPHIC CONCEPTS** Explain why the boundaries of the regions shown in the map are more distinct than they would be if the map depicted the extent of a sports team's fans.

**16. SYNTHESIZE** Explain why the reach of New York and Philadelphia's media markets might have less impact today than it would have had 30 years ago.

A media market is a region covered by local television and radio stations. The people living within a particular media market receive the same programs from their local stations.

## GEO-INQUIRY | MAKING CONNECTIONS

Part of geographic thinking is understanding how complex human and natural systems interact at different scales. The Geo-Inquiry Process enables you to think like a geographer looking for spatial patterns—and encourages the use of this type of geographic thinking to take informed action. You will learn more about Geo-Inquiry in Chapter 2. For now, let's take a look at the components and an example.

**ASK** A Geo-Inquiry question is an open-ended inquiry into a problem or issue. It is more than just a what, how, or why question. For example, a Geo-Inquiry question might be: *How can we decide the best location for a new regional technology-based school?*

**COLLECT** Gather geographic information to answer your question. This allows you to analyze data from a spatial perspective, looking for patterns and solutions. Using our example: *City officials would gather data on bus routes*

*and analyze locations of land for sale and their proximity to services such as electricity and water.*

**VISUALIZE** Geographers organize data into maps, charts, and infographics to help communicate complex information. Using visuals allows patterns to emerge and leads to a better understanding of spatial complexities that make one potential school site better than another.

**CREATE** Use the visuals to develop a Geo-Inquiry story with a message or call to action based on the data. Using our example: *City officials might create a presentation to the Board of Education.*

**ACT** Finally, the call to action is shared with decision-makers in order to make a change. Using our example: *The Board of Education would then vote on the location of the new regional school.*



ASK — COLLECT — VISUALIZE — CREATE — ACT