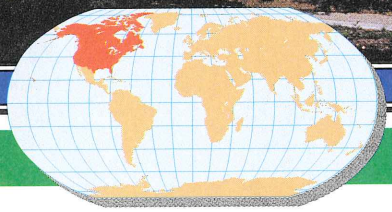
chapter 7

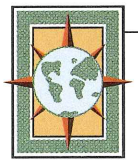
The United States and Canada Today



CHAPTER FOCUS

Geographic Setting

The climate and landforms of the United States and Canada allow a variety of economic activities to flourish. As they use the area's resources, however, people drastically alter the region's environment.



Geographic Themes

Section 1 Living in the United States and Canada

PLACE The United States and Canada have highly developed economies based on agriculture, industry, and the provision of services.

▲ **Photograph:** *Skyline of Toronto, Ontario, Canada*

Section 2 People and Their Environment

HUMAN/ENVIRONMENT INTERACTION The people and governments of the United States and Canada face challenges in conserving the resources on which they depend.

SECTION 1

Living in the United States and Canada

SETTING THE SCENE

Read to Discover . . .

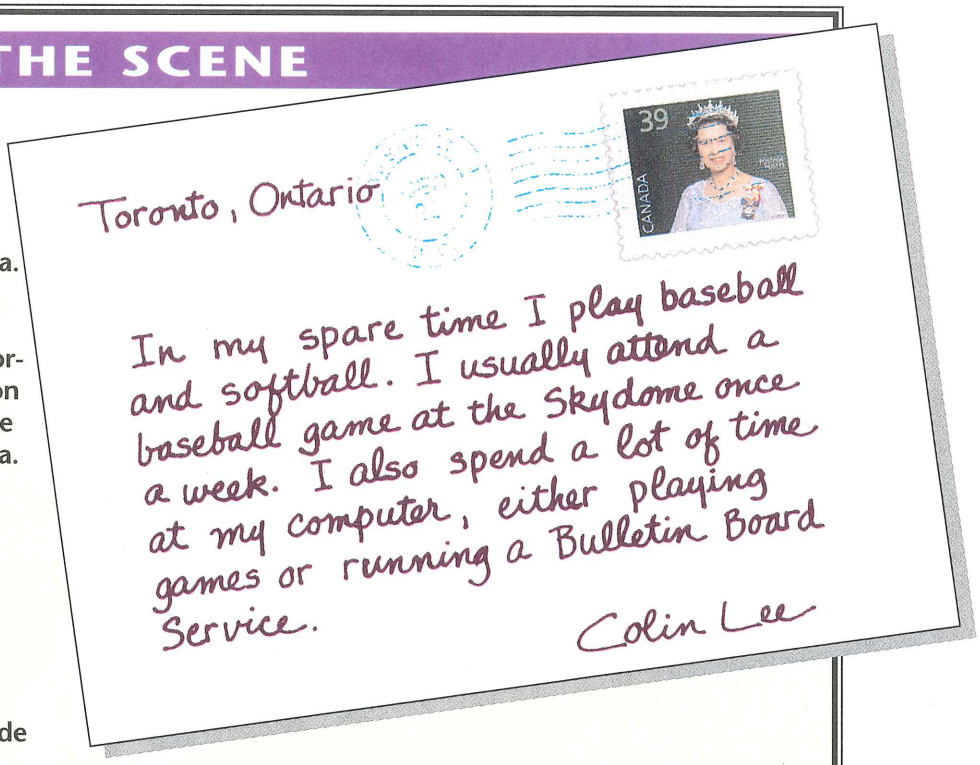
- how agriculture and industry affect the economies of the United States and Canada.
- how a nation's surplus leads to trade.
- what methods of transportation and communication are most important to the United States and Canada.

Key Terms

- free enterprise
- truck farm
- contour plowing
- crop rotation
- service industry
- interdependent
- North American Free Trade Agreement (NAFTA)

Identify and Locate

Midwest, Wheat Belt, Corn Belt, California, Utah, New York, Toronto, St. Lawrence River, Ohio River



Colin Lee, an outstanding mathematics student, is preparing for a career in Canada's diverse economy. The United States and Canada both have highly developed economies and are among the world's top 10 economic powers. Their economies are based on **free enterprise**, or capitalism, which allows individuals to own, operate, and profit from their own businesses. Canada, however, also has a number of government-owned corporations that carry out public services.

The many natural resources available combined with the use of advanced technology have boosted the economic growth of the United States and Canada. With its small population, Canada is a major exporter of mineral products, largely to the United States. The United States, a major producer, imports many goods for several reasons: because of the depletion of United States resources such as petroleum; because of improvements in foreign products; and because of the enormous demands of the United States economy.

HUMAN/ENVIRONMENT INTERACTION

Agriculture

Farmers in the United States and Canada produce a wide variety of agricultural goods. Different parts of the region support different products.

Many Climates, Many Products

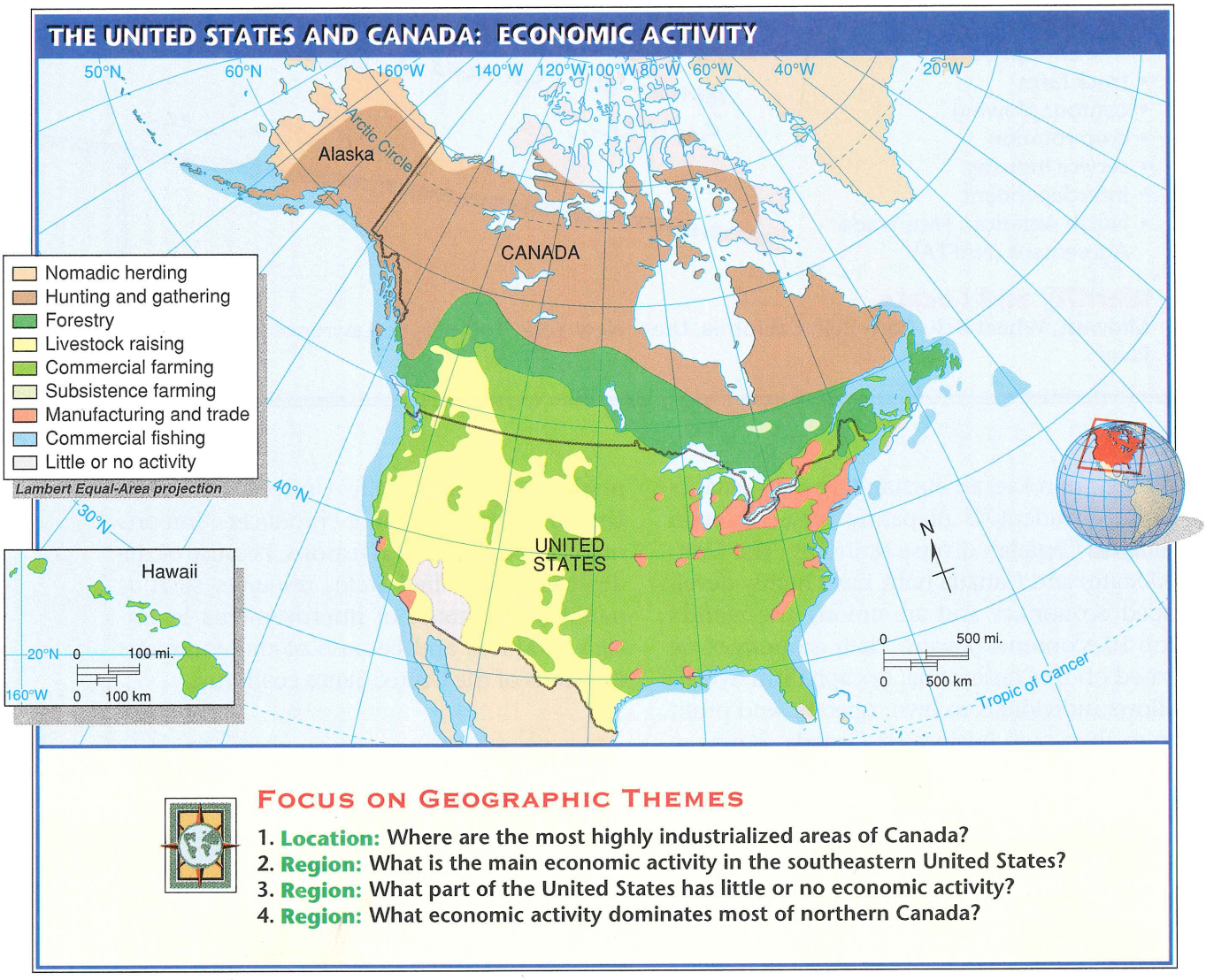
About 55 percent of the farmland in the United States is used for the grazing of livestock. Huge western ranches and ranches in the South and Midwest support millions of beef cattle. Beef is one of the most important agricultural products in the United States.

Cattle also provide the most important agricultural products in Canada. Beef cattle ranches prosper in the drier, western parts of the Prairie Provinces—Alberta, Saskatchewan, and Manitoba. In addition, the north central part of the United States and the Canadian provinces of Quebec and Ontario support dairy farming and raising hogs and chickens.

The three most important grains in the world—wheat, corn, and rice—are grown in the United States and Canada. The region is a world leader in the production of both wheat and corn.

In the United States, the Great Plains has been called the Wheat Belt because so much wheat is grown there. The Prairie Provinces of Canada also are great wheat producers.

In the short growing season of the northern United States, spring wheat, which is planted in early spring and harvested in the fall, is grown. The southern parts of the Wheat Belt produce winter wheat. Winter wheat is planted in the fall so that the roots can grow before the soil freezes. The winter's snow



Focus on Geographic Themes

1. **Location:** Where are the most highly industrialized areas of Canada?
2. **Region:** What is the main economic activity in the southeastern United States?
3. **Region:** What part of the United States has little or no economic activity?
4. **Region:** What economic activity dominates most of northern Canada?

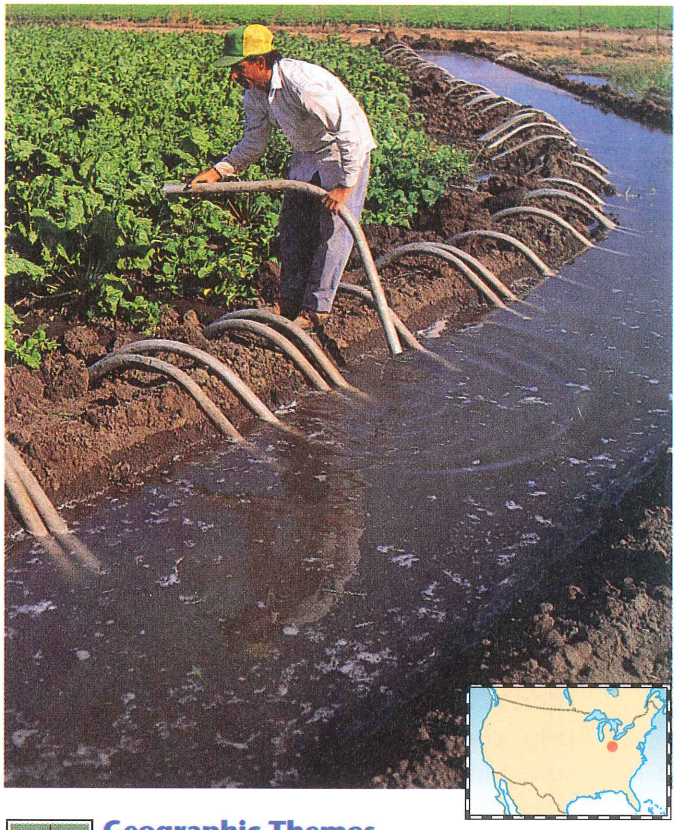
covering protects the young plants and provides spring watering as it melts. Winter wheat is harvested during the summer.

Corn, grown by Native Americans long before the arrival of Europeans, also thrives in the United States and Canada. The United States alone grows more than 40 percent of the world's corn. The nation's Corn Belt extends through the northern Great Plains in a rough band from Ohio to Nebraska. The Canadian provinces of Ontario, Quebec, and Manitoba also count corn as a major crop. About 50 percent of the corn crop is used for animal feed; the rest is used in the manufacture of industrial products or is eaten by humans.

The United States and Canada also grow many other products. In the United States, soybeans, tobacco, and peanuts grow well in the South, while cotton thrives in the South and on irrigated land in the Southwest. Midwest farmers bring oats, sorghum, and barley to market. In Canada, barley, flaxseed, oats, and rye thrive in a belt north of Canada's wheat-growing areas. Southern Ontario's warm summers and relatively long growing season produce a variety of specialty crops, such as soybeans and tobacco.

The United States and Canada also grow vegetables. Potatoes are an important crop in the Canadian provinces of Prince Edward Island and New Brunswick. **Truck farms** in the northeastern United States produce vegetables such as tomatoes, cabbages, and string beans. Located near large cities, truck farms can ship vegetables quickly to market. In the southeastern United States, vegetables such as tomatoes, cabbages, and celery are grown to ship north during the winter. Parts of the Pacific Coast region also produce vegetables. California ranks first among the states in the production of tomatoes, lettuce, and dozens of specialty vegetables, such as peas, asparagus, okra, and avocados.

The United States and Canada also grow many kinds of fruit. Apples, peaches, and cherries flourish in the Great Lakes region. California produces a great diversity of fruits, especially grapes and strawberries. Citrus fruits are grown in central and southern Florida, in the lower Rio Grande Valley of Texas, and in southern California. In Canada, southeastern British Columbia, the St. Lawrence River valley, and areas of Quebec and Ontario are important fruit-growing areas.



Geographic Themes

Human/Environment Interaction: American Midwest

Irrigation systems help crops survive during periods when there is too little rainfall. *What other techniques do American and Canadian farmers use?*

Agriculture and Technology

Technology boosts agricultural production in the United States and Canada. Modern methods of irrigation, for example, improve the harvest on more than 50 million acres (20 million ha) in both countries. Farmers also try to conserve precious soil by **contour plowing**, or plowing along the natural curves of the land to keep topsoil from washing away with rainwater runoff. **Crop rotation**, in which farmers grow different crops in succession on the same land, helps preserve the soil's nutrients. Farmers also allow some land to lie fallow—plowed but not seeded—during a growing season. In addition, farmers often

rotate regular crops, such as soybeans which nourish the soil, with fallow fields.

Scientific developments aid the growth and productivity of farming. Advances in pesticides—substances that kill crop-eating pests—and chemical fertilizers—mixtures that make soil more fertile—increase crop yields. Scientific developments in the breeding of both plants and animals improve output. Hybrid seeds, or seeds from two different types of plants that are crossbred, has led to the production of stronger plants and higher yields.

Inventions of farm machinery such as the tractor, the reaper, the thresher, and eventually the combine—a combination of reaper and thresher—have made farmers more efficient. In the last 60 years, new farming methods have quadrupled the yield in the Midwest alone.

Owners of smaller farms, however, often cannot afford this new equipment. In addition, combines and other machines are best suited for very large farms. These factors make it harder for owners of small farms to compete with the owners of large farms.

As a result, the size of the region's farms has increased, while the number of farmers has decreased. In the last 70 years, the average farm in the United States has more than tripled in size from about 143 acres (58 ha) to about 469 acres (190 ha). Less than 2.5 percent of the United States population now works in farm occupations compared to more than 70 percent in the early 1800s. Only about 3 percent of all Canadians still make their living through farming.

New technologies have enabled farmers to grow surplus crops. Farmers export their surpluses to international markets. This enriches the economies of their nations.

HUMAN/ENVIRONMENT INTERACTION

Manufacturing and Service Industries

About one in seven workers in the United States and Canada makes a living in manufacturing. The region is a world leader in manufactured goods largely because of technologies such as robotics and computerized automation.

Transportation equipment, which includes airplanes, cars, and their parts, ranks near the top of both nations' manufacturing industries. Transportation equipment and machinery is the United States's largest export. The United States manufactures about 18 percent of the world's motor vehicles and ranks second, after Japan, in production.

Food processing is big business in both the United States and Canada. Everything from canned fruits to soft drinks is manufactured in the region. Canada's manufacture of wood pulp, paper, and newsprint makes it a world leader in wood-related industries. Other goods manufactured in this region include clothing, iron, steel, and petroleum products.

Economies produce both goods and services. **Service industries** provide services rather than produce goods. Some services provided by service industries include financial help (banks and insurance), distribution and sale of goods (shipping companies and retail stores), credit cards, financial investment, education, health care, and tourism.

In the United States and Canada, service industries employ more people than any other kind of industry. More than two-thirds of all workers—including doctors, lawyers, teachers, secretaries, and government employees—offer services to others. Service industries account for most of the gross domestic product in both nations as well.

In contrast to manufacturing industries, service industries are growing at a fast rate. Some of the fastest-growing service occupations include computer technicians, analysts, operators, health care, insurance, advertising, and legal services.

MOVEMENT

Trade and Interdependence

In any modern economy, surpluses produced by agriculture and industry can be traded with others. Sometimes this trade takes place

inside a nation's boundaries. At other times trade occurs between two different countries.

Foreign Trade

Trade makes up an important part of the economies of the United States and Canada. Thousands of jobs are connected to exporting, sending goods to other countries, and importing, bringing goods into the country.

The United States leads the world in trade, supplying one-tenth of all goods exported worldwide and importing an even higher percentage. American farmers export more than one-fourth of their crops, including cotton, soybeans, tobacco, and wheat. Many manufactured goods, especially aircraft and spacecraft, computers, and electrical equipment, are exported as well.

The United States imports goods either that it cannot provide or that are cheaper from other countries. Important imports include large amounts of raw materials, such as copper, nickel, and petroleum.

Canada also depends on foreign trade to bolster its economy. The nation exports transportation equipment, wood and wood products, ores, petroleum, and grain. Three-fourths of the fish caught and processed by Canadians enter the export market as well. Among Canada's most important imports are cars and car parts, industrial machinery, computers, and textiles.

The United States and Canada are major trading partners. The United States trades more with the Canadian province of Ontario than with the entire nation of Japan, the United States's second-largest trading partner. In the early 1960s, President John F. Kennedy expressed American-Canadian trade ties when he told a Canadian audience:

Geography made us neighbors. History made us friends. And economics has made us partners.

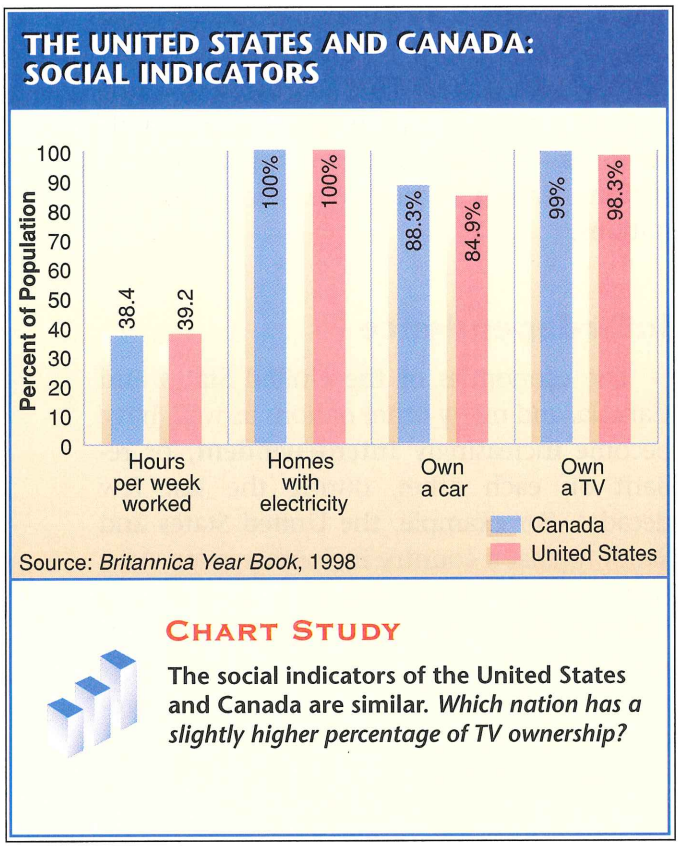
This trading partnership, however, is not equal. Imports from and exports to Canada account for about 20 percent of the United States's total trade. In contrast, trade with the United States accounts for 70 percent of Canada's exports and imports. These huge trade revenues—totaling billions of dollars for each nation—lead to an interdependence between nations.

Interdependence

The economies of the United States and Canada, and many other nations as well, have become increasingly **interdependent**, or reliant on each other, during the last few decades. For example, the United States and Saudi Arabia, a country in southwestern Asia, have become interdependent. The United States produces a surplus of food, but it cannot produce enough oil to meet its large energy needs. On the other hand, Saudi Arabia produces much more oil than it uses, but its farmers cannot feed all the Saudi people. The United States depends on Saudi Arabia for part of its oil imports, and Saudi Arabia depends on exports of food, machinery, and other finished

Geographic Themes

Movement: Los Angeles, California
An extensive freeway system links cities in the United States. *What freeway system links eastern and western Canada?*



goods from the United States. Similarly, Japan depends on Canada's raw materials, while Canada depends on Japan's manufactured products.

Countries often worry about increased interdependence, especially when their imports exceed their exports. They sometimes restrict trade, hoping to become more self-reliant by supporting domestic production. At times Canada has passed legislation trying to restore balance to its trading relationship with the United States.

Recently, however, the United States and Canada have signed trade agreements that ensure their continued interdependence. The early 1990s saw significant steps taken toward the elimination of remaining trade barriers and the creation of a free trade pact called the **North American Free Trade Agreement (NAFTA).** The new trading area includes Canada, the United States, and Mexico. NAFTA has created one of the world's most productive economic blocs, rivaled only by the European Union and Japan.

MOVEMENT

Transportation and Communications

The United States and Canada lead the world in transportation and communications systems. The many methods of moving people and goods and of exchanging information are very efficient and depend on the latest technology.

An Economy on the Move

The United States and Canada have excellent roadway systems. In the United States, about 190 million motor vehicles travel the 4 million miles (6.4 million km) of streets, roads, and highways that crisscross the nation. Canada's smaller, more concentrated population relies on about 14.5 million motor vehicles and 550,000 miles (885,000 km) of roads. Most of the roadways in the region have paved surfaces.

The Federal Interstate Highway System in the United States is a 45,000-mile (72,000 km) network of freeways designed to link 90 percent of the country's cities that have populations greater than 50,000. The interstate system was largely finished during the 1990s. In Canada, the freeway system includes the Trans-Canada Highway. This two-lane highway, completed in 1962, extends almost 5,000 miles (8,045 km) across the nation, from British Columbia to Newfoundland.

All these roads are used by millions of cars and trucks each day. The trucking industry carries almost 75 percent of the industrial products hauled in the United States. In Canada, the trucking industry transports a smaller share of the country's total freight—partly because Canada's severe winters can create poor conditions for shipping freight by road. Still, more than 110 million short tons (100 million t) of freight are transported over Canada's road system each year.

Automobiles account for more than four-fifths of the passenger traffic in the cities of the United States and Canada. Therefore,

automobile manufacturing and sales are important businesses in both countries. The automobile's great popularity and the development of freeway systems have also encouraged the rise of other businesses, including motels, shopping malls, and drive-in banks and restaurants.

The railroad changed the face of the region forever. The tracks created a link between East and West, ending the West's isolation and opening it for settlement. On May 10, 1869, two rail lines in the United States connected in Utah, creating the world's first transcontinental railroad. One observer for the *New York Times* described its effect on the country's unity:

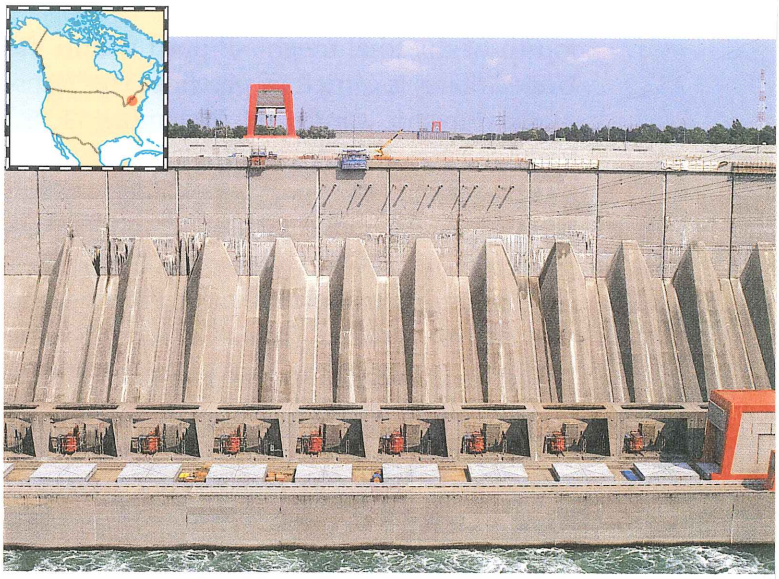
The inhabitants of the Atlantic seaboard and the dwellers on the Pacific slopes are henceforth emphatically one people.

In 1885, Canada also opened its western lands when it pounded the last spike into its own transcontinental railroad.

Industry in the United States and Canada has always relied heavily on the railroads. United States railroad lines carry about 35 percent of the freight transported each year. About 30 percent of Canada's freight moves over that nation's rails.

Although passenger use has declined on the regular rail lines, commuter trains—trains that carry workers between the outlying communities and central cities such as New York, San Francisco, and Toronto—are important passenger carriers. One commuter train can carry as many commuters as 1,000 cars. Underground rail systems and elevated rail systems also transport people from one part of a city to another.

The natural waterways of the region were the most important means of transportation for early settlers. The French used the St. Lawrence River, the Great Lakes, and the Mississippi River as their routes to the interior of the continent. To the south, pioneers depended on the Ohio River to guide them westward.



Geographic Themes

Place: Niagara Falls, New York

Power plants harness the waterpower of the Niagara River to generate electricity. *What Great Lakes waterway is also important to the economies of the United States and Canada?*

Today, about 15 percent of all United States freight travels the nation's inland waterways—canals, rivers, and lakes that can be used by boats, mainly barges. Half of this amount is shipped on the Mississippi River, which together with the Ohio and its tributaries is the United States' busiest inland waterway.

Canada's most important waterways are the Great Lakes and the St. Lawrence Seaway. A joint project between the United States and Canada that was completed in 1959, the St. Lawrence Seaway is a system of canals and locks that opened a shipping lane from the Great Lakes to the Atlantic Ocean.

This new seaway made ocean ports out of inland cities like Montreal and Toronto. Although closed by ice from December to April, the St. Lawrence Seaway is used heavily during the rest of the year. Canadian barges carry most of the 50 million short tons (45 million t) of freight shipped each year on this inland waterway.

Pipelines are another important means of freight transportation in the United States and Canada. Pipelines carry such cargo as natural gas, oil, gasoline, and kerosene. About one-

fourth of the total freight shipped within the United States is carried by pipeline. The Trans-Alaska Pipeline carries oil 800 miles (1,287 km) from the northern tundra lands of Alaska southward to the port of Valdez, where warmer waters make pickup by oil tankers possible. In Canada the 2,500-mile-long (4,022-km-long) Interprovincial Pipeline and the slightly shorter Trans-Canada Pipeline transport petroleum and natural gas from Alberta to Montreal.

Dependable Communications Networks

Advanced communications systems help provide this region with ways to share information and exchange ideas. One of the basic, government-supported communications systems found in both nations is the postal systems. The postal systems help people and businesses stay in communication with one another.

Telephones also provide networks for exchanging information. The United States and Canada have about 200 million telephones—more than 1 telephone for every 2 people. The United States alone uses about two-fifths of all the telephones in the world.

The use of computers and other advanced technologies, such as microwave relays and communications satellites, have advanced the telecommunications systems in this region. Telecommunications systems send and receive messages over long distances.

Some telecommunications systems not only cover long distances but also reach large audiences. Television and radio are examples of this kind of mass communication. In the United States, 98 percent of all households have at least 1 television, and most of the televisions are color. In both the United States and Canada, there is more than 1 television for every 2 people—as many televisions as there are telephones. Radios, however, are the most popular form of communication. In Canada the number of radios almost equals the number of people, and in the United States, there are 2 radios for every person.

In the United States, most telecommunications systems used for mass communication, like television and radio stations, are owned privately. The government, however, does regulate their use to some extent. The Federal Communications Commission (FCC) licenses stations, decides which broadcast channels should be used, and requires each station to offer public service programs. Canada's government exerts greater control over mass communications industries than does the United States'. For example, a government agency called the Canadian Radio-television and Telecommunications Commission regulates and licenses all electronic communications systems in Canada. It also requires that 30 percent of all musical radio programs and 60 percent of all television programs involve Canadian writers or performers.

Written materials are another vital form of mass communications in this region. In both countries, thousands of private publishers produce newspapers, books, and magazines. The United States has more than 1,500 daily newspapers. Canada has more than 100 daily newspapers printed in English and about 10 printed in French. In addition, the United States publishes about 45,000 book titles each year, while Canada publishes about 20,000. Several thousand magazine titles also are produced in this region.

SECTION 1 ASSESSMENT

Checking for Understanding

1. **Define** free enterprise, truck farm, contour plowing, crop rotation, service industry, interdependent, North American Free Trade Agreement.
2. **Locating Places** Where is the United States Corn Belt?
3. **Movement** Why does the United States import goods?
4. **Place** What is the St. Lawrence Seaway?

Critical Thinking

5. **Determining Cause and Effect** How have advances in farm machinery affected the owners of small farms?

SECTION 2

People and Their Environment

SETTING THE SCENE

Read to Discover . . .
- how pollution can cause international problems.
- how the overuse of natural resources is affecting the economies of the region.

Key Terms
- acid rain
- smog
- eutrophication
- bycatch

Identify and Locate
Adirondack Mountains, Los Angeles, Cleveland, Pacific Northwest, Grand Banks

As the people of the United States and Canada look to the future, they confront many challenges. Over the past two centuries, the United States and Canada have created mighty economies. Sometimes, however, people have lost sight of the importance of preserving resources as well as utilizing them. As a result, they have harmed the land that gives them both life and livelihoods. Some of this harm comes in the form of human-made pollutants. At other times, overuse of natural resources is the problem.

HUMAN/ENVIRONMENT INTERACTION

Pollution

To thrive, plants and animals need clean air, uncontaminated water, and wholesome nutrients. Pollution, however, is threatening the natural environment. Pollution—the introduction of harmful materials into the environment—damages the quality of air, water, and land. Some of this pollution has natural causes. For example, active volcanoes toss millions of tons of ash into the atmosphere every year.

Now, however, human-made pollution is interfering with nature's ability to adjust. One ecologist expressed the change pollution has brought to each person in this way:

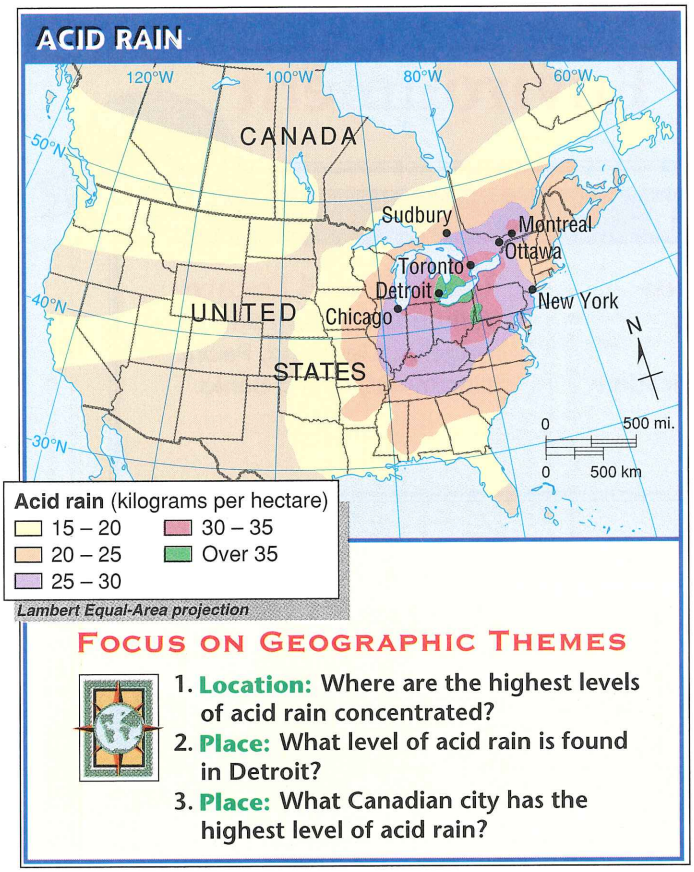
As the tide of chemicals born of the Industrial Age has arisen to engulf our environment, a drastic change has come about. . . . For the first time in the history of the world, every human being is now subject to contact with dangerous chemicals, from the moment of conception until death.

Acid Rain

One kind of pollution that affects plants and fish is **acid rain**—precipitation that carries abnormally high amounts of acidic material. This acidic material is created when the chemicals emitted by cars, factories, and power plants react with the water vapor in the air. For example, fumes belching out of industrial smokestacks may carry high amounts of sulfur dioxide—which becomes sulfuric acid—while car exhaust includes nitrogen oxide—which becomes nitric acid. Scientists estimate that about 60 percent of the nitrogen oxide in the whole region comes from cars and trucks.

Sulfuric acid and nitric acid are found in acid rain. As acid rain falls to the ground, it corrodes stone and metal buildings and bridges, damages crops, and pollutes the soil.

Acid rain also takes a terrible toll on the waters of the region. Fish and other marine life cannot live in waters with high acid levels.



FOCUS ON GEOGRAPHIC THEMES

1. **Location:** Where are the highest levels of acid rain concentrated?
2. **Place:** What level of acid rain is found in Detroit?
3. **Place:** What Canadian city has the highest level of acid rain?

Acid rain is held responsible for the deaths of at least 15,000 Canadian lakes, as well as 8 percent of the lakes found in New York's Adirondack Mountains. An additional 150,000 North American lakes have been damaged by this form of pollution.

Because the emissions that help create acid rain are carried by the wind, the source of these chemicals often is far from where the rain finally falls. This results in emissions from United States industries accounting for much of Canada's acid rain. Nearly one-half of the acid rain that falls on eastern Canada comes from emissions in the midwestern and northeastern sections of the United States.

As a result of acid rain crossing country borders, these 2 nations have spent the last 20 years working together to solve this problem. In the 1980s, they worked to identify causes of acid rain. Then, in 1991, the governments signed a pact to reduce by half the 1980 level of emissions that contribute to acid rain by the end of the century.

Smog

The nitrogen oxides that help create acid rain also are a major ingredient in **smog**, a haze caused by the sun's interaction with exhaust gases. Smog kills plants and also harms the human population, burning people's eyes and irritating their throats and lungs.

The California city of Los Angeles is plagued by smog. In Los Angeles, the 8 million cars and trucks on the road produce between 70 and 80 percent of all smog-causing emissions. Smog is measured daily in Los Angeles. On days when the smog's yellow haze is too thick, smog alerts are issued. During these alerts people with respiratory diseases are asked to stay inside, and everyone is told to drive only if necessary.

To deal with this problem of smog, many governments have passed laws regulating car emissions. California and several other states are requiring that 2 percent of all cars sold in the state create no emissions. By the year 2003, that figure jumps to 10 percent. In response, Chrysler recently introduced a "zero-emission" minivan that runs on electricity instead of nitrogen-producing gasoline. In addition a Massachusetts company has a solar-powered car on the drawing board. It is estimated that early in the 21st century, 200,000 cars that run on alternate fuel sources will be on California's roads.

Pollution and the Great Lakes

Water systems in the United States and Canada are polluted not only by acid rain but also by sewage and industrial and agricultural wastes dumped by humans into the water supplies. The Great Lakes have been polluted in this way. Once considered an inexhaustible resource, these waters have been used as dumping sites. This problem grew as industries and cities began to spring up along the shores and dump their wastes into the lakes. In 1976, one writer described one of the sources of Lake Erie's pollution like this:

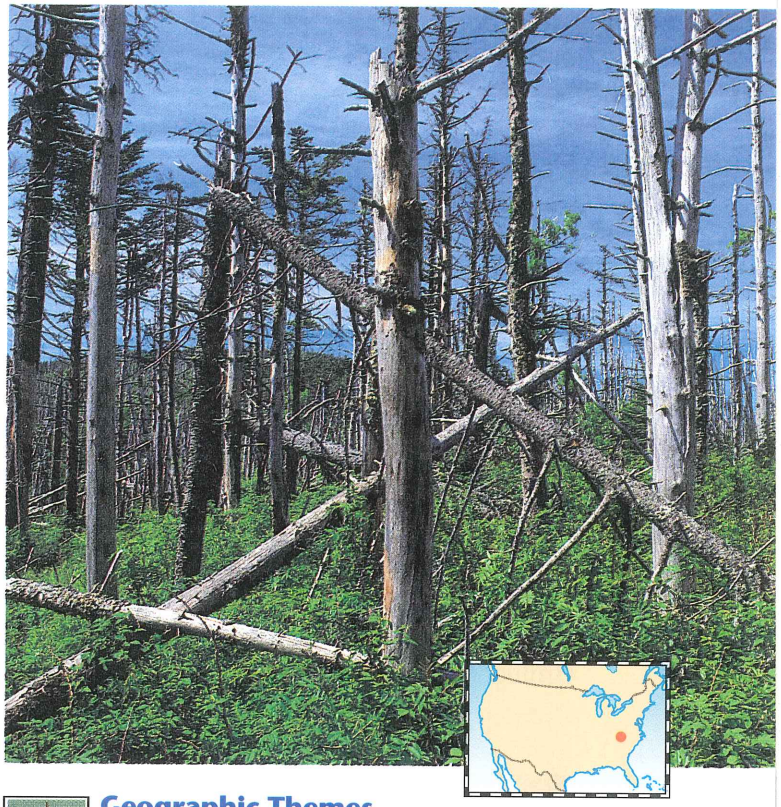
One can stand, for example, at the top of a Cleveland skyscraper and see the Cuyahoga River running out into Erie as a thick, chocolate-brown stream carrying the washings of a dozen steel works.

Surrounding industries also expose the Great Lakes to the effects of thermal pollution, caused by the release of heated industrial water into the cooler lake water. Runoff from farms using chemical fertilizers and pesticides also damages life in the lakes.

All this pollution has had a profound effect on the marine life of the Great Lakes. In recent years the amount of fish provided by Great Lake fisheries has decreased by millions of pounds. Pollution has had a particularly severe impact on some fish species such as the valuable lake herring.

Another result of all this pollution is the speedup of eutrophication (yu•TROH•fuh• KAY•shuhn). **Eutrophication** is the process in which a lake, or other body of water, becomes rich in dissolved nutrients. These nutrients nourish many small plants, especially algae. In extreme cases, these masses of plants—in their growing, dying, and decomposing—can use up all the oxygen in a body of water, leaving none for the fish. The algae also can choke the lake, eventually turning it first into a marsh, and finally into dry land. Normally, eutrophication takes thousands of years. The minerals spilled into the waters as humans pollute, however, speeds up this process. Scientists fear that this pollution is causing eutrophication to occur in sections of Lake Erie.

Today the governments of Canada and the United States have passed legislation designed to decrease the pollution in the Great Lakes region and other waters. In addition, the United States offers financial aid to state and local governments to encourage construction of sewage treatment and water treatment facilities. These facilities work to remove contaminated particles before the waste reaches water sources. As a result of the efforts of federal, state or provincial, and local governments, some progress has been made in bringing the waters of the Great Lakes and other bodies of water to their natural state.



Geographic Themes

Human/Environment Interaction: North Carolina
This forest near the Great Smoky Mountains of North Carolina was damaged by acid rain. *How have American and Canadian governments responded to the dangers of pollution?*

HUMAN/ENVIRONMENT INTERACTION

Overuse of Resources

As pioneers struggled to settle this region, they slashed, hacked, and burned their way through the forests that stood before them. At the same time, fishing fleets from many European nations discovered the wealth of marine life in the North American coastal waters and began filling their holds with fish. These activities, begun and often continued without regard to conservation, have seriously

depleted two resources on which the economies of the United States and Canada depend.

Logging

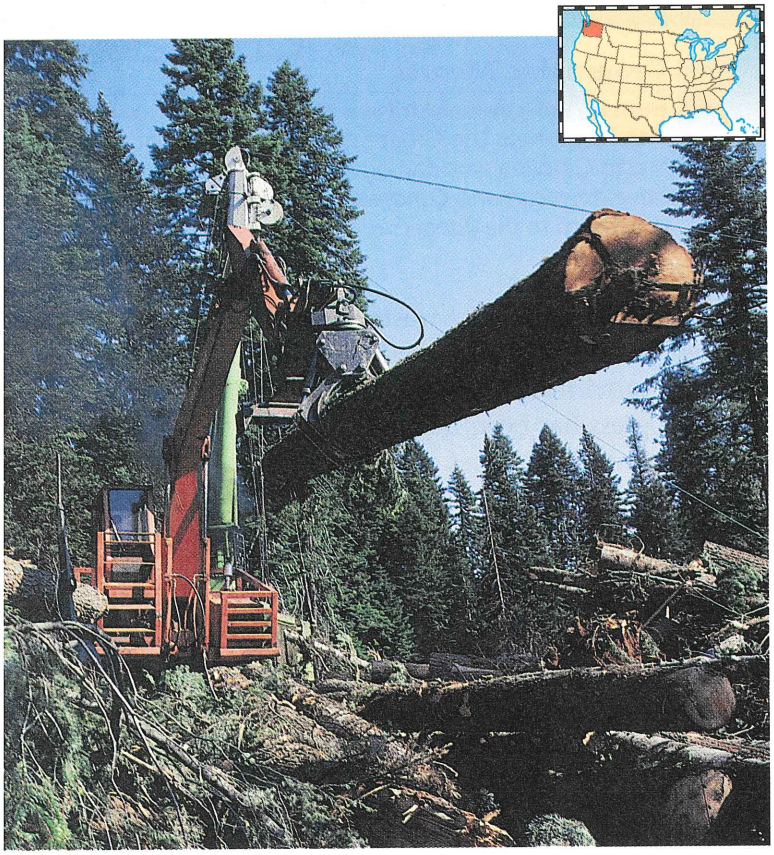
Wood and wood products are important economic contributors to this region. The United States leads all other nations, producing 15 percent of the world's wood. Canada, to which lumber represents an even more important export, supplies more than 5 percent. All this lumber production requires more than 2 million workers and more than 50,000 manufacturing facilities. These huge numbers indicate the importance of the lumber industry to employment in the region.

In the United States, logging companies are allowed to harvest logs from public lands. The United States Forest Service is charged with monitoring this harvesting. The Forest Service's job is to balance timber harvests with other uses of public forestland, including recreation and preservation of wildlife habitats. Some conservation leaders claim that the Forest Service is putting lumber profits above other concerns, because its budget is partly based on money earned from lumber sales.

Another concern is the Forest Service's approval of clearcutting. When a forest is clearcut, all trees are cut down. In addition, roads must be built into the forests so that the lumber can be brought out. The Forest Service has constructed nearly 400,000 miles (600,000 km) of roads for logging companies—more than eight times the lengths of roads comprising the Federal Interstate Highway System. Conservationists argue that the combination of road-building and clearcutting destroys the natural ecosystem of the area.

Clearcutting also threatens the remaining old-growth forests of the Pacific Northwest. A common definition for old-growth forests is forests "containing at least 8 big trees per acre and exceeding 300 years in age or measuring more than 40 inches (102 cm) in diameter at breast height." During the 1990s, more than 100,000 acres (40,500 ha) of old-growth forest were cleared each year. If this rate continues, all old-growth forests will disappear from the Pacific Northwest by the end of the 20th century.

This clearcutting of old-growth trees also endangers the wildlife of a region. For example, the northern spotted owl, whose home is the old-growth forests of the Pacific Northwest, was placed on the endangered species list in 1990. Experts say that to save the bird from extinction, logging in this area will have to be cut back drastically. This has pitted the fate of a species against the jobs of a region. Clearcutting deprives humans of other benefits of old growth as well. For example, a potential treatment for cancer was discovered using the bark of the yew tree. Yew trees thrive in old-growth forests and were traditionally viewed by loggers as trash trees, burned during the clearcutting process. Some scientists worry about what valuable discoveries will be gone with the lost old-growth forests.



Geographic Themes

Region: Pacific Northwest

The United States Forest Service has sought to balance timber harvests with forest conservation. *What practice allowed by the Forest Service has been opposed by many conservationists?*

One alternative to clearcutting is called sustainable forestry. When this method is used, certain trees in a forest are targeted for harvesting while other trees are left untouched. In addition, trees harvested in this way can be taken from the forest by mule or horse, which means extensive roads would not have to be built. Sustainable forestry would protect the area's natural ecosystem and preserve old growth.

The confrontation between the lumber industry and conservationists is far from over. In response to the concern about lost lumber jobs, one environmentalist said:

The question in the Pacific Northwest is not whether the logging of old growth should stop, but when. The supply of ancient trees is limited.

Fishing

The abundance of fish in the oceans along the Atlantic Coast was in part responsible for original European settlement of this region. As early as 1497, explorer John Cabot reported bountiful fishing in the Grand Banks area. The Grand Banks consists of a 139,000-square-mile (360,010-sq.-km) area off the southeast coast of Newfoundland. Fishing fleets from England, France, and Spain came to reap the fishing site's economic benefits. Immigrants, mostly from Ireland, England, and France, settled the coasts of Newfoundland and became actively involved in catching and preparing fish for regional and foreign markets.

By the mid-1900s, fishing by ships from many nations had depleted the fish population. As a result, Canada imposed a fishery conservation zone covering a 200-nautical-mile (370-km) band around its coast. This zone, however, was not wide enough to include the Grand Banks. Fishing off the eastern coast, especially by foreign fleets, has continued even as the number of fish decline.

In 1992, the Canadian government, concerned about dwindling populations of cod in the waters, lowered cod-fishing quotas by 35 percent and announced the temporary closing of Newfoundland's east coast cod fishery. These actions caused the largest layoff in Canadian history, putting 20,000 people out of work. Newfoundlanders, so reliant on fishing, are still trying to recover from these economic blows.

A combination of pollution and overfishing also has damaged the fishing industry in the United States. In one recent seven-year period, the total United States catch declined by more than 25 percent.

Waste in the fishing industry also is partly responsible for the depletion of fish populations. High-tech trawlers sweep the oceans for fish, often catching unwanted fish species, marine mammals, and birds. This dead **bycatch**, as it is called, is simply tossed overboard. Scientists estimate that more than 10 percent of the fish caught worldwide are bycatch, thrown away by commercial fishers. It is believed this amount easily equals the amount of fish caught in all United States waters every year. Conservationists urge increased government funding to develop fishing gear that will cut down on the amount of bycatch netted by fishing ships.

Section 2 Assessment

Checking for Understanding

1. **Define** acid rain, smog, eutrophication, bycatch.
2. **Locating Places** Where are this region's old-growth forests located?
3. **Human/Environment Interaction** How has pollution affected the Great Lakes?
4. **Human/Environment Interaction** What caused the largest layoff in Canadian history?

Critical Thinking

5. **Drawing Conclusions** Why has acid rain made it necessary for the governments of the United States and Canada to work together?

CASE STUDY

NOT IN MY BACKYARD!

A group called Use Less Stuff (ULS) has declared November 20 as Use Less Stuff Day. ULS says: "In the U.S., 2.7 billion holiday greeting cards are sold each year. If everyone sent one card fewer, it would save over 50,000 cubic yards of paper."

National Geographic, December 1997

In 1987 the town of Islip, New York, ran out of room for its garbage. The city appealed to the state to expand its dump. The state, however, refused. An Alabama businessman offered to sail a load of garbage to North Carolina. The town loaded more than three thousand tons of stinking refuse onto a barge, and it set out.

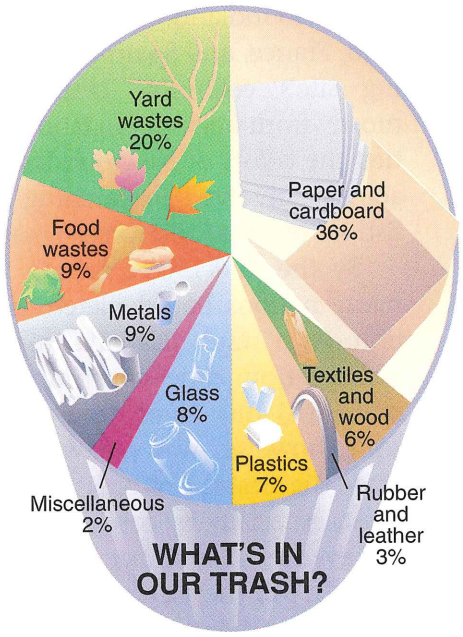
North Carolina, however, refused to let the barge drop off its cargo. So began the barge's spring search along the coast of the southern United States and beyond. It stopped at Florida, Alabama, Mississippi, Louisiana, Texas, Mexico, Belize, and the Bahamas. There were no "trash takers."

Barge loaded with garbage from Islip, New York

THE ISSUE

In a very graphic way, the Islip garbage barge focused attention on America's growing problem of too much garbage and nowhere to take it.

The smelly boat did for the environmental cause what environmentalists had been trying to do for several decades: shock the American public into an awareness of the seriousness of the landfill situation.



THE BACKGROUND

In the mid-1950s, *Life* magazine reported on a popular trend called "throw-away living." The report pointed to an American buying binge of disposables: disposable plates, eating utensils, razors, ballpoint pens, diapers—anything that promised to cut down on the tedium of everyday tasks. Most disposable items were made of paper or plastic. Both were light, inexpensive, and, in the case of plastic, extremely durable.

"Suddenly," Goeller said, "there was this wonderfully awful symbol of the problem—a huge plate of garbage that no one wanted to take a bite out of."

When *Life* magazine published its report, very few Americans were concerned about the explosive growth of trash. By the early 1960s, environmentalists were sounding the alarm for eventual landfill overflow and calling for recycling programs.

During the next 30 years, environmental concerns grew as studies showed the reason that the dumps were filling so rapidly. Very little of the material was disintegrating. Dumps covered each day's garbage with dirt to keep out rats, flies, and other scavenging animals as well as minimize the odor. The dirt, however, also kept out the natural "ingredients" of decomposition: bacteria and sunlight. Garbage in landfills was being preserved, not decomposing.

When the Islip barge appeared, most states and communities were aware of the problems of overflow and pollution from which America's landfill system suffered.

THE POINTS OF VIEW

Transporting garbage to another place seemed reasonable to Islip. Angry North Carolina environmentalists, however, were having none of somebody else's garbage. Dave Goeller of Environmental Action, a Washington-based group, recalled that environmentalists had tried to spark interest in the landfill crisis for years, and no one cared. "Suddenly," Goeller said, "there was this wonderfully awful symbol of the problem—a huge plate of garbage that no one wanted to take a bite out of."

THE ISSUE TODAY

After 57 days at sea, the barge was allowed to return to Islip. The garbage was finally burned in Brooklyn.

Since that embarrassing spring, Islip has gotten rid of 75 percent of its landfill with a vigorous recycling program. It has also built a mass fill incinerator to handle 50 percent of its garbage intake.

Many communities around the country followed Islip's lead. Recycling programs are in place in many cities; plans for more than a thousand huge incinerators to be built during the 1990s are in the works.

Environmentalists, however, continue to be concerned. Each American generates about 4 pounds (1.8 kg) of trash and garbage a day, some of which, particularly the plastic, will never decompose. Landfills are closing, incinerators are highly controversial, and fewer communities want either in their backyards. So, to their call for recycling programs, environmentalists have added the need to reduce the use of throwaway items. They maintain that recycling is better than disposal, reuse is better than recycling, and reduction is best of all.

Reviewing the Case

1. What is the landfill crisis?
2. How do environmentalists think the landfill problem can be solved?
3. **Human/Environment Interaction** What effects have landfills had on the environment?

Reading a Cartogram

On most maps, land areas are drawn in proportion to the actual surface areas on the earth. In a **cartogram**, country size is based on some value *other* than land area, such as population.

REVIEWING THE SKILL

A cartogram provides clear visual comparisons of whatever value it measures.

To read a cartogram, apply the following steps:

- Read the map title and key to identify the kind of information presented on the cartogram.
- Look for relationships among the countries. Determine which countries are largest and smallest.
- Compare the cartogram with a conventional land-area map to determine the degree of distortion of particular countries.

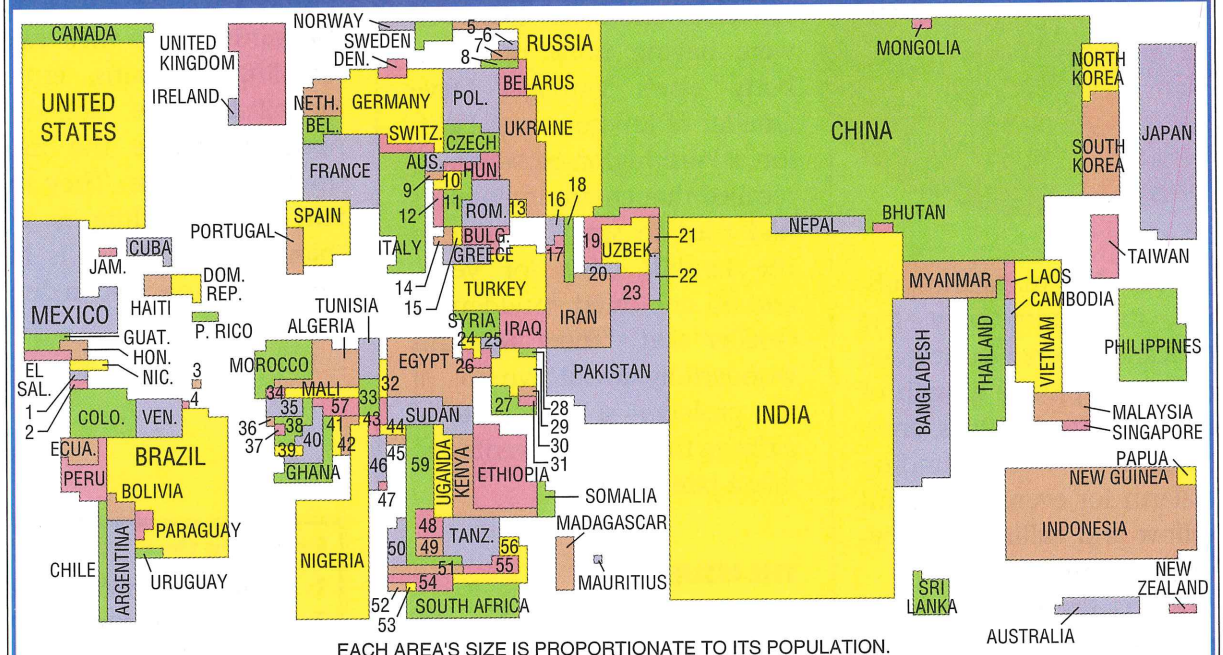
PRACTICING THE SKILL

Use the cartogram below to answer the following questions:

1. What value determines the relative sizes of countries on this cartogram?
2. Compare the cartogram with the conventional land-area map on pages A2–A3. How has the relative size of Canada been changed on the cartogram? How would you explain this change?

For additional practice in reading a cartogram, see Practicing Skills on page 146 of the Chapter 7 Assessment.

CURRENT POPULATION COMPARISONS



EACH AREA'S SIZE IS PROPORTIONATE TO ITS POPULATION.

1. COSTA RICA
2. PANAMA
3. TRINIDAD AND TOBAGO
4. GUYANA
5. ESTONIA
6. FINLAND
7. LATVIA
8. LITHUANIA
9. SLOVENIA
10. CROATIA
11. YUGOSLAVIA
12. BOSNIA/ HERZEGOVINA
13. MOLDOVA
14. ALBANIA
15. FORMER YUGOSLAV REPUBLIC OF MACEDONIA
16. GEORGIA
17. ARMENIA
18. AZERBAIJAN
19. KAZAKHSTAN
20. TURKMENISTAN
21. KYRGYZSTAN
22. TAJIKISTAN
23. AFGHANISTAN
24. LEBANON
25. JORDAN
26. ISRAEL
27. YEMEN
28. KUWAIT
29. SAUDI ARABIA
30. UNITED ARAB EMIRATES
31. OMAN
32. LIBYA
33. NIGER
34. MAURITANIA
35. SENEGAL
36. GUINEA-BISSAU
37. GUINEA
38. SIERRA LEONE
39. LIBERIA
40. IVORY COAST
41. TOGO
42. BENIN
43. CHAD
44. CENTRAL AFRICAN REPUBLIC
45. CONGO
46. CAMEROON
47. GABON
48. RWANDA
49. BURUNDI
50. ANGOLA
51. ZAMBIA
52. NAMIBIA
53. BOTSWANA
54. ZIMBABWE
55. MOZAMBIQUE
56. MALAWI
57. BURKINA FASO
58. ERITREA
59. DEM. REP. OF THE CONGO

chapter 7

HIGHLIGHTS

SECTION 1 Living in the United States and Canada

KEY TERMS

free enterprise (p. 129)
truck farm (p. 131)
contour plowing (p. 131)
crop rotation (p. 131)
service industry (p. 132)
interdependent (p. 133)
North American Free Trade Agreement (p. 134)

Irrigation on a farm in the Midwest

SUMMARY

- The rich soils, plentiful waters, and varied climates of farms in the United States and Canada encourage the production of a wide variety of meats, grains, vegetables, and fruits.
- Advanced farming technologies have increased crop yield and farm size but decreased the number of farm workers.
- The culture region of the United States and Canada is a world leader in the production of manufactured goods, but its service industries employ more people than its factories.
- The many agricultural and manufactured products of the United States and Canada help the region lead the world in trade.
- Complex networks for transportation and communications support the peoples and economies of the region.

SECTION 2 People and Their Environment

KEY TERMS

acid rain (p. 137)
smog (p. 138)
eutrophication (p. 139)
bycatch (p. 141)

Forest in North Carolina damaged by acid rain

SUMMARY

- Pollutants include acid rain and smog, both caused by emissions from factories and cars.
- The water supply in the United States and Canada is polluted by industry wastes, agricultural chemicals, and sewage.
- Pollution of the waters severely impacts the fish population and also speeds up eutrophication.
- Logging, especially of public lands, is endangering the old-growth forests of the Pacific Northwest.
- Overfishing and waste in the fishing industry have seriously depleted the fish population, resulting in economic hardship for areas dependent on the sea.

chapter 7

ASSESSMENT

Reviewing Key Terms

Choose the vocabulary term that best completes each of the sentences below. Write your answers on a separate sheet of paper.

free enterprise (p. 129)
truck farms (p. 131)
contour plowing (p. 131)
crop rotation (p. 131)
service industries (p. 132)
interdependent (p. 133)
North American Free Trade Agreement (p. 134)
acid rain (p. 137)
smog (p. 138)
eutrophication (p. 139)
bycatch (p. 141)

SECTION 1

1. ____ are located near large cities so that vegetables grown on them can be shipped to urban markets.
2. Education, health care, and tourism are examples of ____.
3. To preserve nutrients, farmers practice ____ by growing different crops in succession, or they let land lie fallow.
4. In recent decades, the economies of the United States and Canada have become increasingly ____.
5. ____ keeps topsoil from washing away.
6. ____ refers to an economic system that allows individuals to own, operate, and profit from their own businesses.
7. The ____ was developed to eliminate trade barriers.

SECTION 2

8. Pollution partly created by car emissions includes ____ and ____.
9. The ____ snared by trawlers' nets is thrown overboard.
10. ____ can eventually turn a body of water into dry land.

Reviewing Facts

SECTION 1

11. Where in the United States and Canada are most beef cattle raised?
12. What is the United States's leading export?
13. What country is Canada's chief trade partner?

SECTION 2

14. How has acid rain affected lakes in the United States and Canada?
15. What is the United States Forest Service and what are its responsibilities?
16. What is the Grand Banks?

Critical Thinking

17. **Analyzing Information** How has agricultural surplus added to the economies of the United States and Canada?
18. **Identifying Central Issues** How does NAFTA reflect interdependence between the United States and Canada?

Geographic Themes

19. **Movement** In what ways is the St. Lawrence Seaway important to the movement of freight in the United States and Canada?
20. **Human/Environment Interaction** Why do conservationists prefer sustainable forestry to clearcutting?

Practicing Skills

Reading a Cartogram

21. Refer to the cartogram on page 144. How have the relative sizes of Japan and Australia been changed on the cartogram? What do the sizes of these countries on the cartogram tell us about them?

Using the Unit Atlas

Refer to the physical geography section of the Unit Atlas on pages 88–89.

22. What mineral resources are found in the Canadian Shield?
23. Where are the Everglades located?

Projects

Individual Activity

In this chapter, you learned about the many agricultural products grown in the United States and Canada. Research the agriculture of either country, then create an agricultural map of your chosen nation.

Cooperative Learning Activity

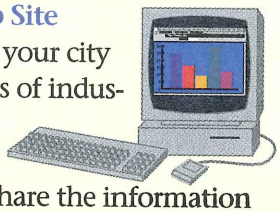
Have two students imagine they are loggers dependent on the harvesting of old-growth forests. Two other students are environmentalists concerned with preserving the old-growth forests. Debate the use of old-growth forests on public lands.

Writing About Geography

Cause and Effect Imagine you are a reporter researching environmental issues in the United States and Canada. Write a newspaper story in which you discuss how you think these issues will continue to affect these nations.

Technology Activity

Creating Your Own Web Site



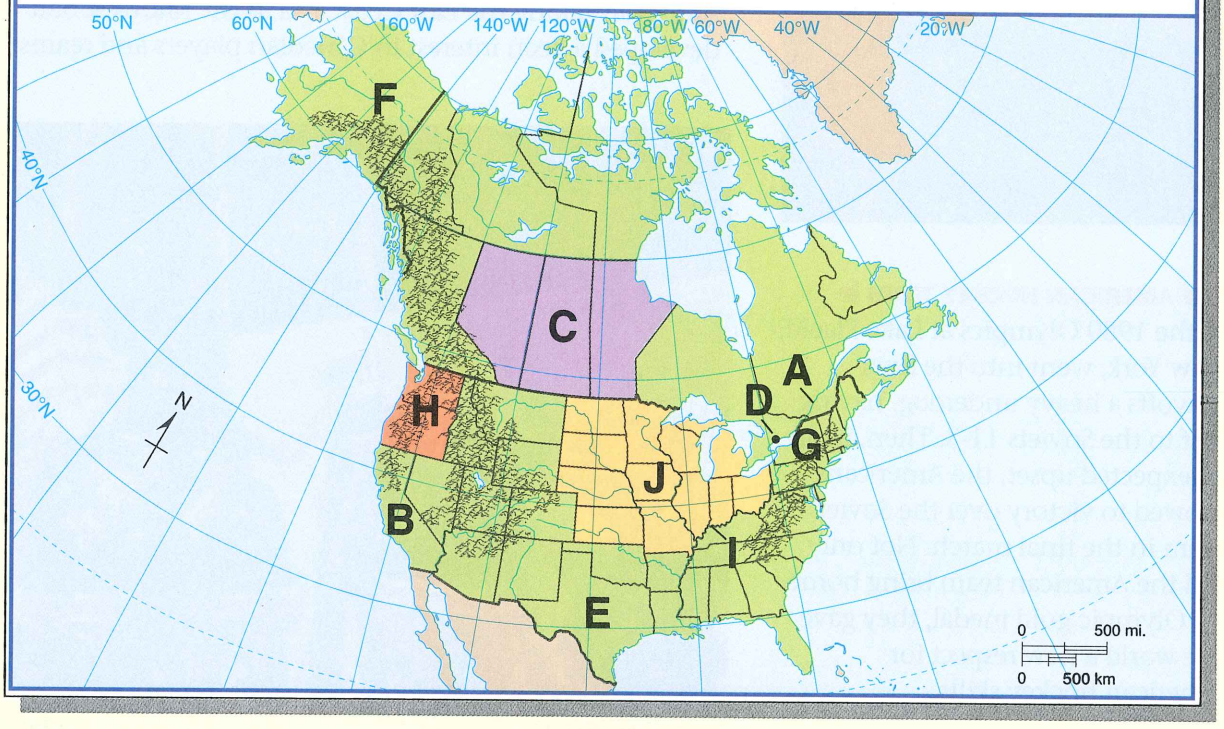
Research the economy of your city or town. Include the types of industries, trading partners, and environmental effects of the industries. Share the information you gather by placing it on the Web. Include a map of your locale as well as clip art to accompany the data you provide to the public.

Locating Places

THE UNITED STATES AND CANADA: PHYSICAL/POLITICAL

Match the letters on the map with the places and physical features of the United States and Canada. Write your answers on a separate sheet of paper.

1. Midwest
2. Prairie Provinces
3. California
4. New York
5. Toronto
6. St. Lawrence River
7. Ohio River
8. Alaska
9. Texas
10. Pacific Northwest

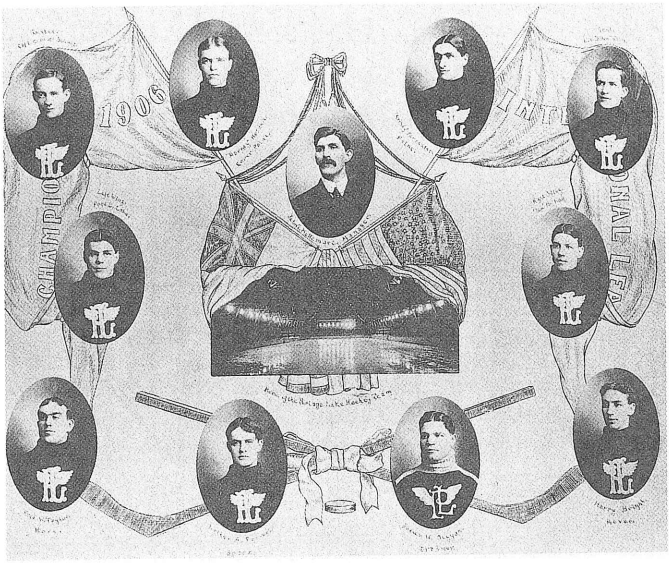


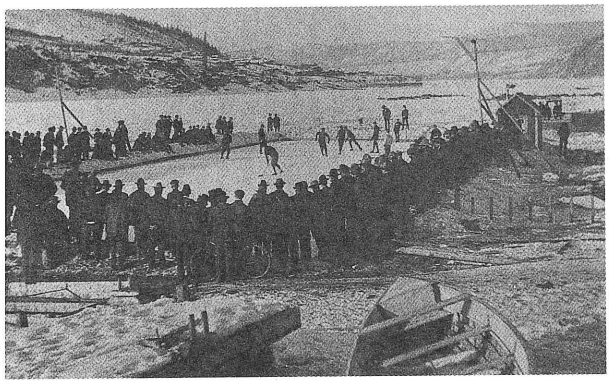
GEOGRAPHY CONNECTION

Canada and the United States

Ice Hockey

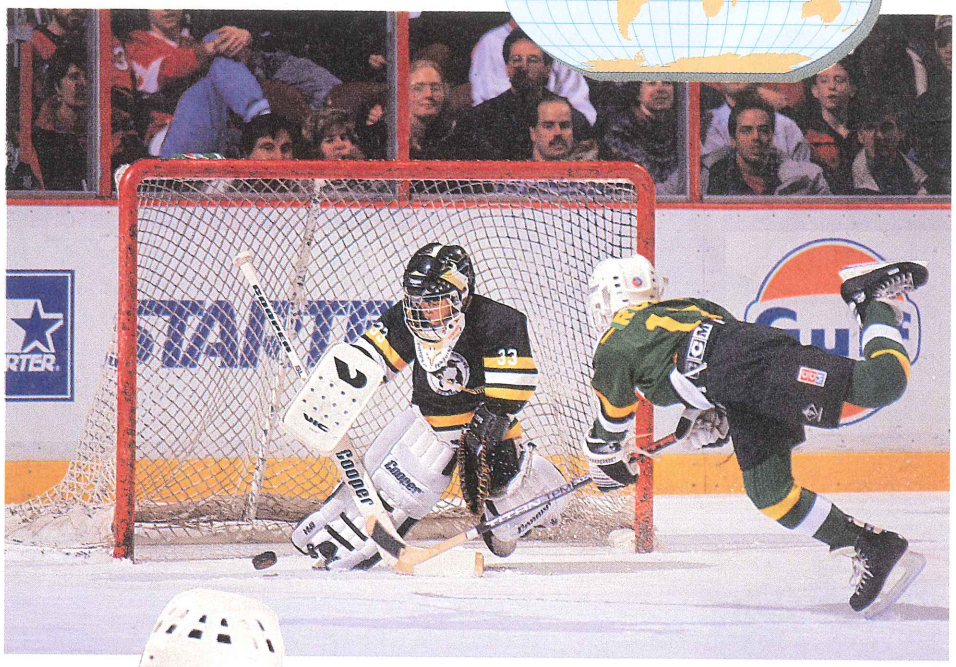
One day in the mid-1860s, at the frozen harbor of Kingston, Ontario, a group of bored Canadian soldiers cleared the snow from the ice. Then they strapped on their skates, and using their field hockey sticks and balls, proceeded to "invent" Canadian ice hockey. By 1900 hockey had become Canada's national pastime. During the 20th century, millions of Americans have developed the same passionate interest in this fast, entertaining sport.





THE SPREAD OF HOCKEY from Canada to the United States began in the 1880s and 1890s when Canadians sparked interest in the game among their American relatives, friends, or business contacts. By the end of the 1890s, Americans along the East Coast and in the Midwest had developed a keen interest in Canadian players and teams.

THE AMERICAN HOCKEY TEAM at the 1980 Olympics at Lake Placid, New York, went into the final playoffs a heavy underdog, having lost to the Soviets 11-3. Then, in an unexpected upset, the Americans plowed to victory over the Soviet team in the final match. Not only did the American team bring home an Olympic gold medal, they gave the world a new respect for American hockey skills.



◀ **THE FIRST PRO HOCKEY CIRCUIT** was formed during the first decade of the 20th century. Dr. J. L. Gibson, a retired Canadian hockey player who later became a dentist, hired a team of Canadian hockey professionals. For three years Gibson's team played teams in the American Midwest.

▲ **ENTHUSIASTIC FANS** still are attracted to hockey in the 1990s. Hockey teams play in almost every American state. The Kid hockey system has divisions for boys and girls, men and women. Significantly, at the boys' "Bantam" level (13 and 14 years old), promising youngsters are scouted, and at the Junior level (17 to 19 years old) the most talented American players are prepared for the National Hockey League.

CANADIAN AND AMERICAN HOCKEY GREAT WAYNE GRETZKY ▶ owned the ice in the 1980s. In 1989 he became the National Hockey League's all-time leading scorer with 1,851 points. Hockey stars packed crowds into arenas throughout North America beginning in the 1920s. The stars included Howie Morenz, dubbed Lightning Legs, for his grace and speed. Morenz and other players made hockey a major league attraction on both sides of the border.

Checking for Understanding

1. How did ice hockey spread from Canada to the United States?
2. **Place** What role does ice hockey play in your community?