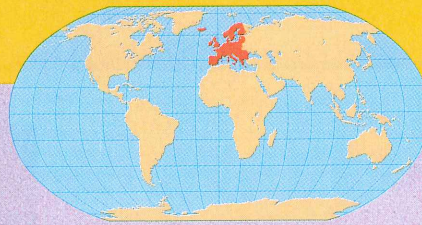
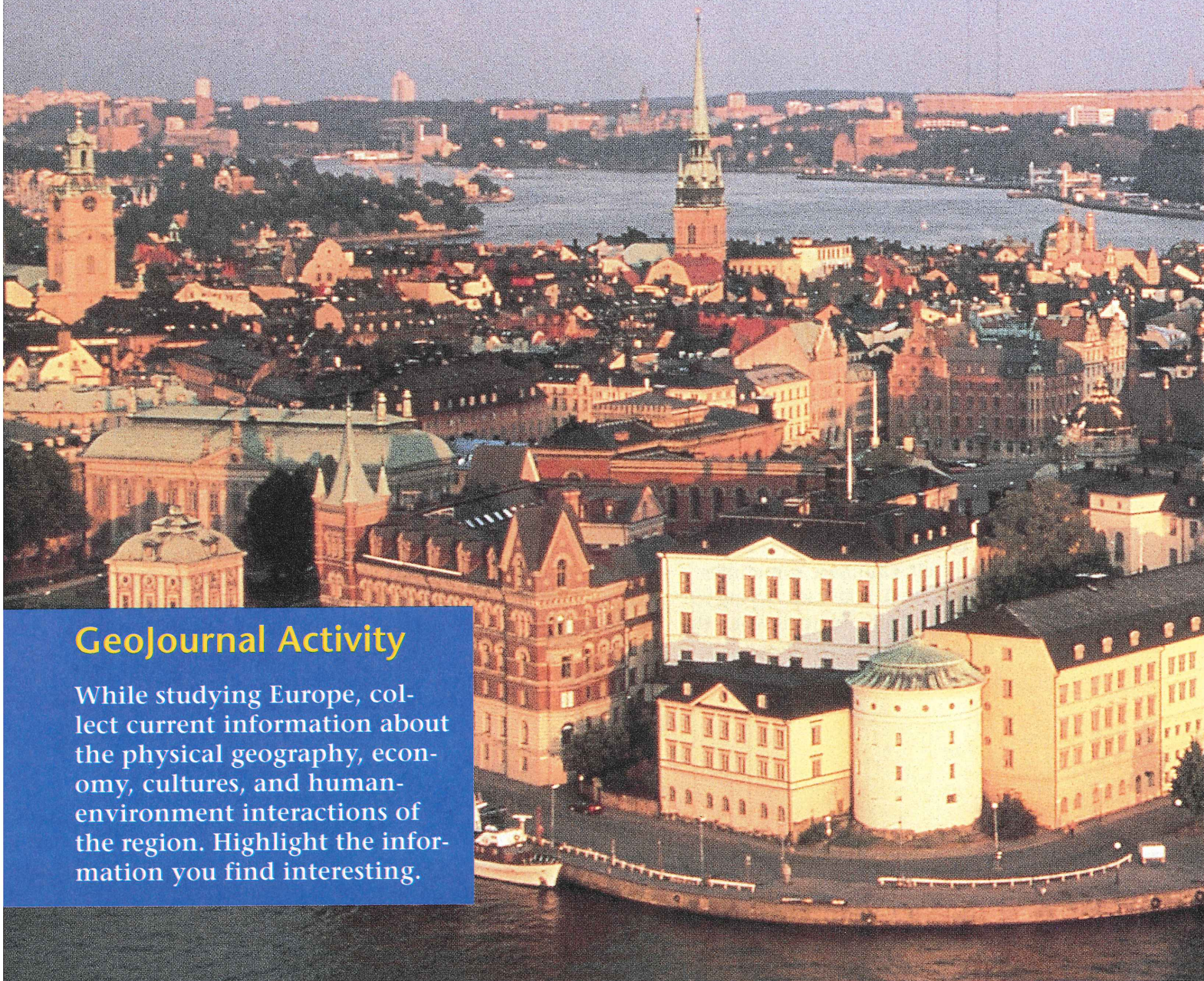


UNIT



4 *Europe*

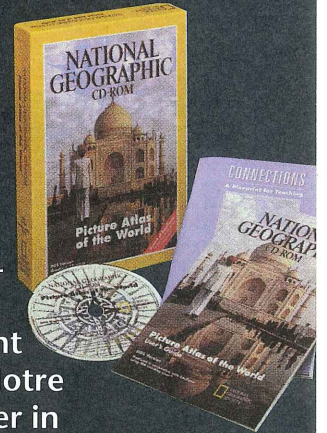


GeoJournal Activity

While studying Europe, collect current information about the physical geography, economy, cultures, and human-environment interactions of the region. Highlight the information you find interesting.

Picture Atlas of the World CD-ROM

Many interesting bridges and buildings have been built over and along rivers in major European cities. Gather the following seven photographs for a Handbook of Architectural styles: the Tower Bridge and the Houses of Parliament in London; the Louvre and Notre Dame in Paris; the Vitava River in Prague; the "old bridge" in Florence, Italy; and the Danube River in Budapest, Hungary. Read the photo captions and then answer the following questions:



1. How many bridges span the Thames River in London?
2. What is the architectural style of the Cathedral of Notre Dame?

interNET CONNECTION

For more information about Europe visit the National Geographic Society's Web site.

www.nationalgeographic.com

For a unit-based activity visit the Glencoe Social Studies Web site.

www.glencoe.com

Stockholm, the bright, handsome capital of Sweden, stands on footings of granite.

- ◀ A boy jumps his bicycle above a sidewalk along the Seine. Notre Dame is in the background.

Cultural Geography

EXPLORING CULTURAL DIVERSITY

1. What nations make up the European continent?
2. What areas of Europe are the most heavily populated? Most sparsely populated?
3. What is the approximate population of Europe?

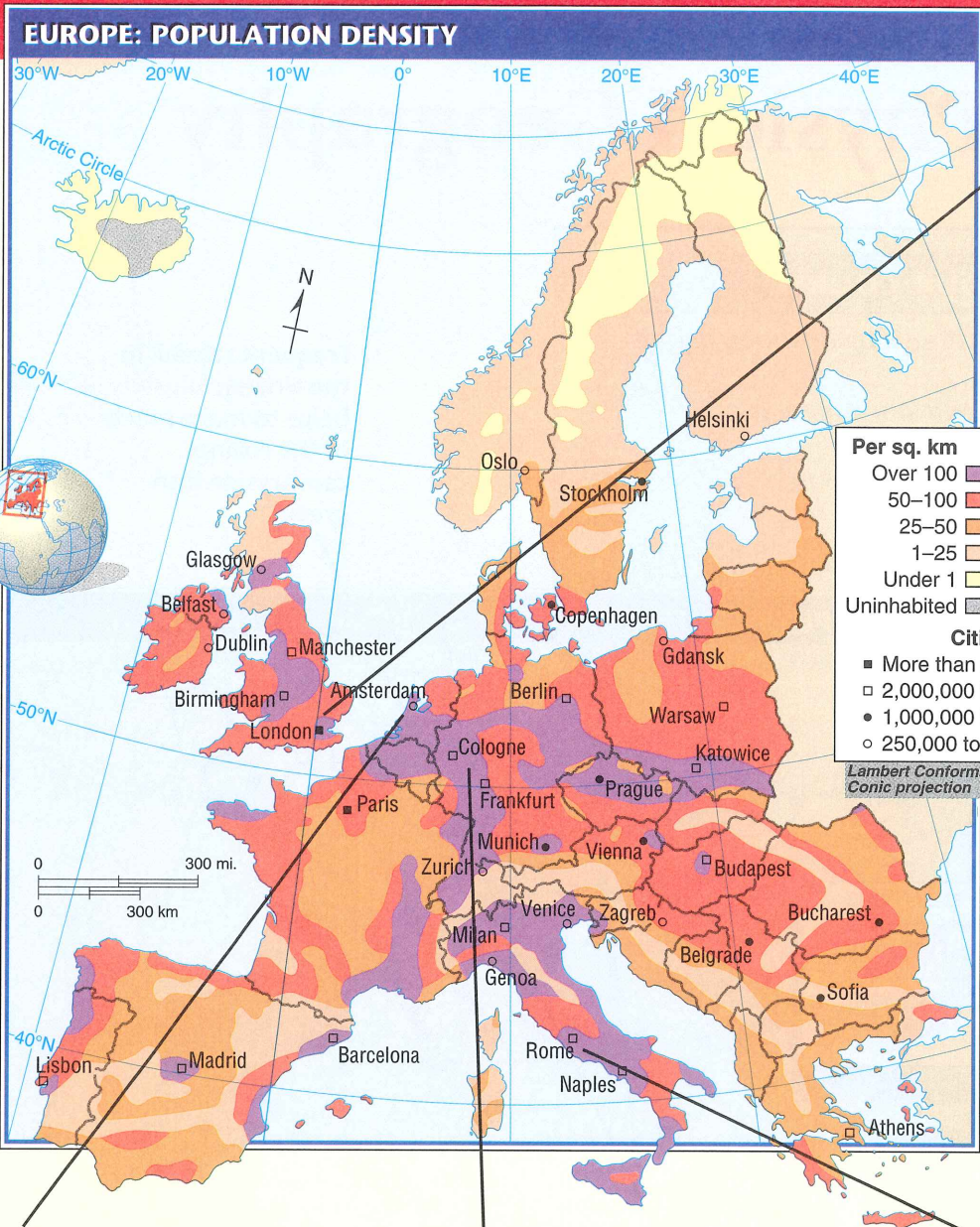
From the 1200s to the early 1900s, **Austria** was the center of a huge empire that included much of central and eastern Europe. Today it is a small landlocked country.



Iceland has the oldest legislature in the world, the *Althing*.

Switzerland has three official languages: German, French, and Italian.

The Olympic Games began in **Greece** about 776 B.C. as part of religious festivals.



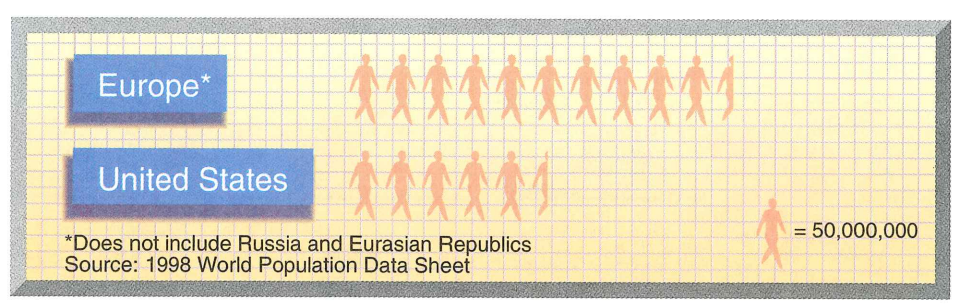
London, the capital of the **United Kingdom**, is one of Europe's largest cities. It has a population of about 8 million.

The Netherlands is one of the most densely populated countries in Europe, with an average of more than 1,000 people per square mile.

Germany has experienced a rapid flight from farms into towns and cities; the rural population dropped from about 23 percent in 1950 to about 15 percent in 1998.

Vatican City, located within the city of Rome, is the center of the Roman Catholic Church and is the world's smallest populated nation. Only about 1,000 people live there.

Population: Europe and the United States



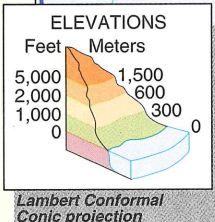
Europe has twice as many people as the United States.

Physical Geography

CHARTING YOUR COURSE

1. Is Europe's coastline long or short, jagged or straight?
2. What major mountain ranges are located in Europe?
3. What are three of Europe's principal natural resources?

Frequent rainfall in the **British Isles** helps to make much of the rolling countryside lush green.



Mont Blanc in the French Alps, at 15,771 feet (4,807 m), is the highest mountain in the region of Europe.



Sweden is known for its rich deposits of iron, lead, and copper.

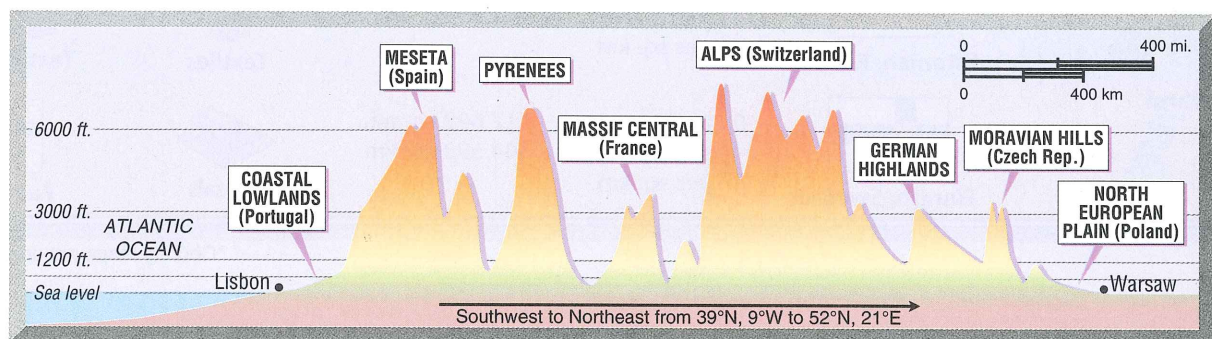
Crude oil and natural gas fields in the **North Sea** have provided a valuable source of income for the **United Kingdom** and **Norway**.











































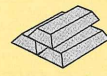

Germany is Europe's largest steel-producing nation.

Coal mining is **Poland's** most significant industry.






















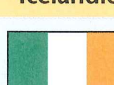















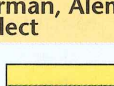





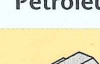




Croatia is the most industrialized of the former Yugoslav republics.

Europe: Physical Profile


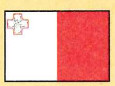



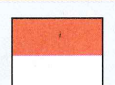









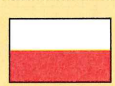























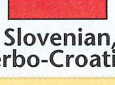








COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORT	PRODUCTS IMPORT
Albania 	 Albanian, Greek	3,300,000 312 per sq. mi. 121 per sq. km	10,579 sq. mi. 27,400 sq. km	 Fuels	 Machinery
Andorra 	 Catalan	54,000 291 per sq. mi. 113 per sq. km	185 sq. mi. 479 sq. km	 Clothing	 Electronics
Austria 	 German	8,100,000 253 per sq. mi. 98 per sq. km	31,942 sq. mi. 82,729 sq. km	 Machinery	 Machinery
Belgium 	 Flemish, French, German, Italian	10,200,000 866 per sq. mi. 334 per sq. km	11,790 sq. mi. 30,536 sq. km	 Machinery	 Machinery
Bosnia and Herzegovina 	 Serbo-Croatian	4,000,000 203 per sq. mi. 78 per sq. km	19,691 sq. mi. 43,230 sq. km	 Machinery	 Fuels
Bulgaria 	 Bulgarian, Turkish	8,300,000 194 per sq. mi. 75 per sq. km	42,683 sq. mi. 110,548 sq. km	 Machinery	 Machinery
Croatia 	 Croatian	4,200,000 193 per sq. mi. 75 per sq. km	21,590 sq. mi. 55,918 sq. km	 Machinery	 Machinery
Czech Republic 	 Czech	10,300,000 345 per sq. mi. 133 per sq. km	29,838 sq. mi. 77,280 sq. km	 Chemicals	 Chemicals
Denmark 	 Danish	5,300,000 324 per sq. mi. 125 per sq. km	16,382 sq. mi. 42,430 sq. km	 Machinery	 Machinery
Estonia 	 Estonian, Russian	1,400,000 88 per sq. mi. 34 per sq. km	16,320 sq. mi. 42,269 sq. km	 Textiles	 Textiles
Finland 	 Finnish, Swedish	5,200,000 44 per sq. mi. 17 per sq. km	117,602 sq. mi. 304,590 sq. km	 Metals	 Fuels















*Country maps not drawn to scale.

COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORTS	PRINCIPAL IMPORTS
France  Paris	 French	58,800,000 277 per sq. mi. 107 per sq. km	212,392 sq. mi. 550,095 sq. km	 Machinery	 Machinery
Germany  Berlin	 German	82,300,000 610 per sq. mi. 235 per sq. km	134,853 sq. mi. 349,270 sq. km	 Machinery	 Machinery
Greece  Athens	 Greek	10,500,000 211 per sq. mi. 81 per sq. km	49,768 sq. mi. 128,900 sq. km	 Food	 Machinery
Hungary  Budapest	 Hungarian	10,100,000 284 per sq. mi. 110 per sq. km	35,653 sq. mi. 92,341 sq. km	 Food	 Machinery
Iceland  Reykjavik	 Icelandic	300,000 7 per sq. mi. 3 per sq. km	38,707 sq. mi. 100,251 sq. km	 Fish	 Ships
Ireland  Dublin	 English, Irish (Gaelic)	3,700,000 138 per sq. mi. 53 per sq. km	26,598 sq. mi. 68,890 sq. km	 Machinery	 Machinery
Italy  Rome	 Italian	57,700,000 508 per sq. mi. 196 per sq. km	113,357 sq. mi. 293,594 sq. km	 Machinery	 Machinery
Latvia  Riga	 Latvian	2,400,000 102 per sq. mi. 39 per sq. km	23,958 sq. mi. 62,051 sq. km	 Machinery	 Textiles
Liechtenstein  Vaduz	 German, Alemannic dialect	30,000 500 per sq. mi. 194 per sq. km	60 sq. mi. 155 sq. km	 Machinery	 Machinery
Lithuania  Vilnius	 Lithuanian	3,700,000 147 per sq. mi. 57 per sq. km	25,019 sq. mi. 64,799 sq. km	 Machinery	 Petroleum
Luxembourg  Luxembourg	 French, German, Luxembourgisch	400,000 427 per sq. mi. 165 per sq. km	1,000 sq. mi. 2,590 sq. km	 Metals	 Metals
Macedonia, Former Yugoslav Republic of  Skopje	 Macedonian	2,000,000 208 per sq. mi. 80 per sq. km	9,819 sq. mi. 25,431 sq. km	 Clothing	 Food

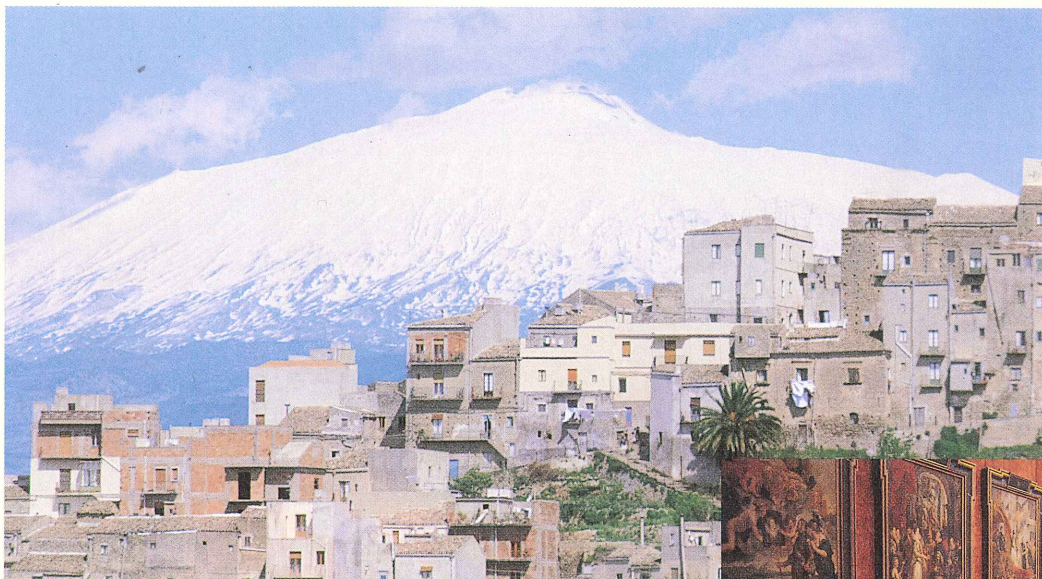
*Country maps not drawn to scale.

COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORT	PRODUCTS IMPORT
Malta 	 Maltese, English	400,000 3,125 per sq. mi. 1,286 per sq. km	120 sq. mi. 311 sq. km	 Machinery	 Machinery
Monaco 	 French	30,000 49,520 per sq. mi. 14,856 per sq. km	.6 sq. mi. 1.6 sq. km		
Netherlands Amsterdam 	 Dutch	15,700,000 1,197 per sq. mi. 462 per sq. km	13,097 sq. mi. 33,921 sq. km	 Machinery	 Machinery
Norway Oslo 	 Norwegian	4,400,000 37 per sq. mi. 15 per sq. km	118,467 sq. mi. 306,830 sq. km	 Fuels	 Machinery
Poland Warsaw 	 Polish	38,700,000 329 per sq. mi. 128 per sq. km	117,537 sq. mi. 304,420 sq. km	 Machinery	 Machinery
Portugal Lisbon 	 Portuguese	10,000,000 280 per sq. mi. 108 per sq. km	35,502 sq. mi. 91,950 sq. km	 Textiles	 Motor Vehicles
Romania Bucharest 	 Romanian, Hungarian, German	22,500,000 253 per sq. mi. 98 per sq. km	88,934 sq. mi. 230,339 sq. km	 Fuels	 Raw Materials
San Marino San Marino 	 Italian	20,000 1,000 per sq. mi. 384 per sq. km	20 sq. mi. 52 sq. km	 Wine	 Crude Oil
Slovakia Bratislava 	 Slovak	5,400,000 291 per sq. mi. 112 per sq. km	18,564 sq. mi. 48,080 sq. km	 Machinery	 Petroleum
Slovenia Ljubljana 	 Slovenian, Serbo-Croatian	2,000,000 255 per sq. mi. 98 per sq. km	7,768 sq. mi. 20,119 sq. km	 Machinery	 Machinery
Spain Madrid 	 Spanish, Catalan, Basque, Galician	39,400,000 204 per sq. mi. 79 per sq. km	192,834 sq. mi. 499,440 sq. km	 Transport Equipment	 Machinery
Sweden Stockholm 	 Swedish	8,900,000 56 per sq. mi. 22 per sq. km	158,927 sq. mi. 411,621 sq. km	 Machinery	 Machinery

*Country maps not drawn to scale.
UNIT 4

COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL PRODUCTS	
				EXPORT	IMPORT
Switzerland 	 German, French, Italian	7,100,000 466 per sq. mi. 180 per sq. km	15,270 sq. mi. 39,590 sq. km	 Chemicals	 Electronics
United Kingdom 	 English, Welsh, Gaelic	59,100,000 634 per sq. mi. 245 per sq. km	93,282 sq. mi. 241,600 sq. km	 Machinery	 Machinery
Vatican City 	 Italian, Latin	1,000	0.2 sq. mi. 0.4 sq. km		
Yugoslavia 	 Serbo-Croatian	10,600,000 270 per sq. mi. 105 per sq. km	39,382 sq. mi. 102,000 sq. km	 Clothing	 Machinery

*Country maps not drawn to scale.

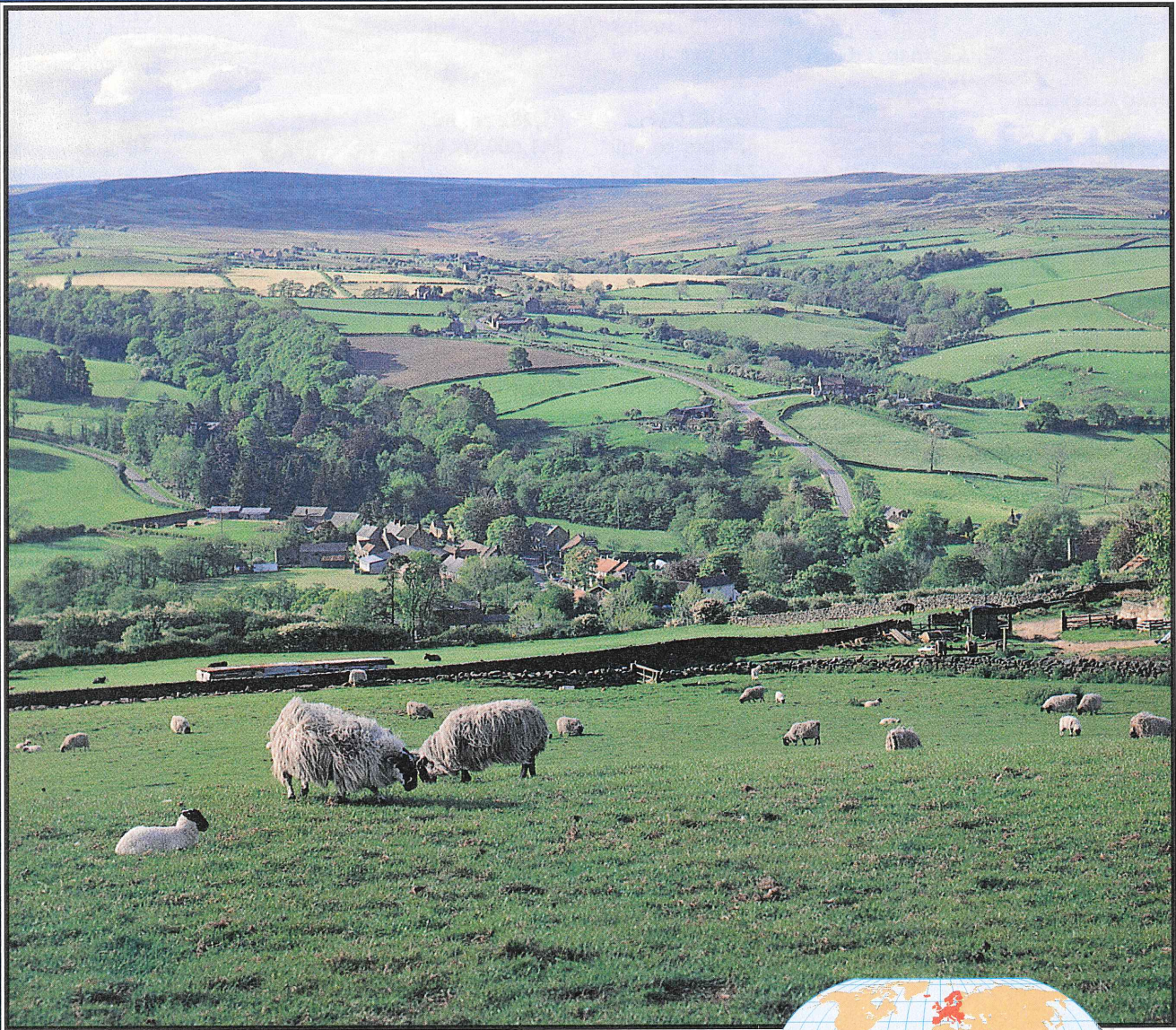


Mount Etna's volcanic peak dominates the landscape of the Italian island of Sicily.



The Louvre, in Paris, France, is considered one of the greatest art museums in the world.

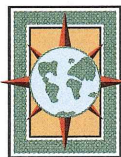
The Physical Geography of Europe



CHAPTER FOCUS

Geographic Setting

The continent of Europe is a large peninsula with a long, irregular coastline. Europe's northern location and closeness to the sea result in a diversity of climates and kinds of vegetation.



Geographic Themes

Section 1 The Land

PLACE The continent of Europe consists of fertile plains interrupted by mountains.

▲ **Photograph:** *Rolling meadows in southern England*

Section 2 The Climate and Vegetation

LOCATION Europe's latitude and location relative to the sea affect its climate regions.

SETTING THE SCENE

Read to Discover . . .

- the features of Europe's coastline.
- the characteristics of Europe's mountains and plains.
- the kinds of natural resources found in Europe.

Key Terms

- fjord
- polder
- peat

Identify and Locate

Eurasia, Scandinavian Peninsula, Iberian Peninsula, Balkan Peninsula, British Isles, Sicily, Alpine mountain system, North European Plain, Rhine River, Danube River, North Sea, English Channel

Gijón, Spain

¡Hola, amigos!

My family and I are spending our summer vacation in Gijón, a beautiful seaport in the northern region of Spain called Asturias. This region is known as the Switzerland of Spain because of its green valleys and tall snowy peaks.

¡Hasta pronto!

José María González



Europe's varied mountains, islands, and unusually long, irregular coastline offer many vacation sites like the ones described in José's postcard. Most of Europe lies within 300 miles (483 km) of a sea-coast. This closeness to the sea has helped to fashion the history of its nations and the cultures of its peoples.

PLACE

Peninsulas and Islands

The continent of Europe is a giant peninsula that extends westward from northwestern Asia. Some geographers refer to this large landmass as Eurasia. The European continent curves in and out in a series of large and small

peninsulas. For this reason, Europe often has been called "a peninsula of peninsulas."

The Northern Peninsulas

Norway and Sweden make up the Scandinavian Peninsula in northern Europe. During the Ice Ages, glaciers along the Norwegian coastline cut deep valleys to the ocean. When the ice sheets retreated, the sea filled in the valleys, called **fjords** (fee•YORDZ). The deep waters of the fjords provide fine harbors surrounded by rocky cliffs topped with thick forests.

Jutland, the northern peninsula opposite the Scandinavian Peninsula, is the major geographic feature of Denmark. Great sandy beaches extend along the western coast of Jutland. The marshes in the southwest result from the tides of the North Sea. Jutland's east-



ern coast consists of rolling hills indented by narrow inlets.

The Southern Peninsulas

Spain and Portugal are located on southern Europe's Iberian Peninsula. Most of the Iberian Peninsula is a large, semiarid plateau. Sun-drenched plains stretch along the peninsula's western and southern coasts. The forested Pyrenees Mountains rise sharply along the northern coast and follow the border with France.

The Apennine Peninsula, which forms Italy, extends like a giant boot into the Mediterranean Sea. The interior of the southern part of the peninsula consists of mountains. The northern part is largely plains. Cliffs line the coast.

The former Yugoslav republics, Albania, Bulgaria, Greece, Romania, and the European part of Turkey occupy most of the Balkan Peninsula in southeastern Europe. The Black Sea, the Bosphorus, the Sea of Marmara, the Dardanelles Strait, and the Aegean Sea border the peninsula on the east. Like the Apennine Peninsula, the Balkan Peninsula is mountainous and is sometimes subject to earthquakes and volcanic activity.

Atlantic Islands

The island country of Iceland lies just south of the Arctic Circle in the North Atlantic Ocean. Grassy lowlands stretch along Iceland's coast, but the land rises sharply to form a large plateau that covers most of the island. Lying



Geographic Themes

Region: Scandinavian Peninsula

Long narrow inlets called fjords are common along the mountainous Norwegian coast of the Scandinavian Peninsula. *How were fjords formed?*



EUROPE: PHYSICAL-POLITICAL



ELEVATIONS

Feet	Meters
5,000	1,500
2,000	600
1,000	300
0	0

- - - - National boundary
 ⊛ Capital city

Conic Projection

FOCUS ON GEOGRAPHIC THEMES



- 1. Movement:** How does the Rhine River contribute to Germany's economy?
- 2. Region:** What mountain chain extends through the Italian Peninsula?
- 3. Region:** What body of water separates the United Kingdom from Denmark?
- 4. Place:** What city is the capital of Portugal?





Geographic Themes

Place: Danube River, Hungary

The Danube River, one of Europe's most important waterways, flows through Budapest, the capital of Hungary. *What plains area does the Danube cross?*

astride the Mid-Atlantic Ridge, Iceland is an area of volcanoes, hot springs, and geysers. Because of Iceland's far-northern location, large glaciers are found next to volcanoes and hot springs.

The British Isles, which lie northwest of the European mainland, consist of two large islands, Great Britain and Ireland, and thousands of smaller islands. Mountain ranges, plateaus, and deep valleys cover most of northern and eastern Great Britain, while low hills and gently rolling plains dominate in the south. Ireland, often called the Emerald Isle, is a lush green land of cool temperatures and abundant rainfall. In many places, the rugged coastline of the British Isles rises in rocky cliffs that drop to deep bays.

Mediterranean Islands

Major islands south of Europe include the Balearic Islands, Corsica, Sardinia, Sicily, and Malta. These islands generally are rugged,

mountainous places, but their warm climate and beautiful scenery attract many tourists. Many Greek islands are chiefly hills and fertile valleys.

PLACE

Mountains and Plains

Europe is essentially plains interrupted by mountains running through its interior and along its northern and southern edges.

Mountain Regions

Rugged highlands run from the northern part of the British Isles through the Scandinavian Peninsula. These Northwest Mountains include some of the oldest rock formations on the earth. The Central Uplands extend from the Iberian Peninsula through France and Germany to eastern Europe. This rocky, barren





Geographic Themes

Place: Mont Blanc, French Alps

Mont Blanc rises 15,771 feet (4,807 m) and is the highest mountain in the Alps. Its peak is always snow-covered. *Where is the Alpine mountain system located?*

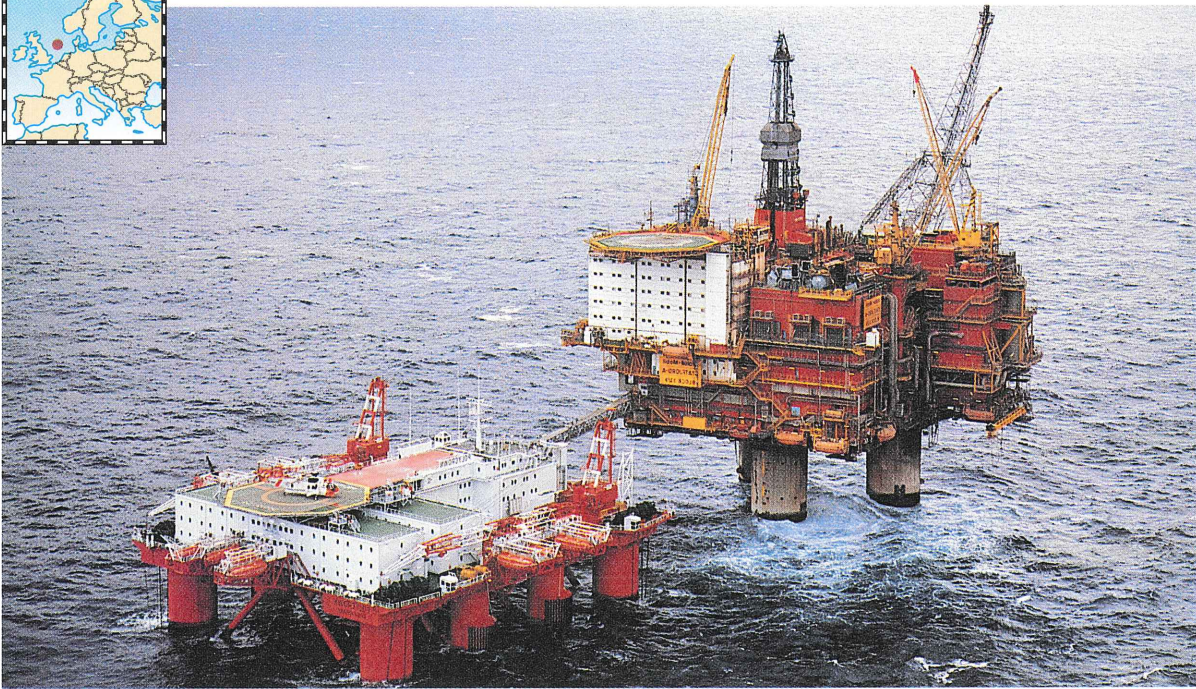
region includes low mountains and high plateaus with scattered forests.

The Alpine mountain system extends across southern Europe from Spain to the Balkan Peninsula. It branches into Russia and some of the Eurasian republics in the region of the Caspian Sea. The Alpine mountain system is higher and younger than those of the Northwest Mountains region and the Central Uplands. Several mountain ranges, including the Alps and the Carpathians, make up the Alpine system. The Alps, however, make up the largest part. These world-famous peaks cover most of Switzerland and Austria and parts of Italy and France. The snowcapped Alps provide some of the world's most spectacular scenery as well as uncounted challenges for expert skiers and accomplished mountain climbers. A British mountain climber offers this description:

The Alps stretch in a tight-drawn bow for five hundred miles [805 km], from the Mediterranean to the Adriatic; a mountainspine which has helped to determine the history of Europe throughout the ages and which today provides the most developed playground in the world. It was also the birthplace of both mountaineering and skiing as sports.

Plains Regions

Europe's broad, fertile plains curve around the highlands. The vast North European Plain stretches from the southeastern United Kingdom and western France more than 1,800 miles (2,896 km) eastward to Poland. An extension of the plain reaches into Ukraine, Belarus, and Russia.



Geographic Themes

Human/Environment Interaction: North Sea Oil and Gas Fields

Europe's richest oil and natural gas fields are found in the North Sea between Scotland and Norway. What other area of Europe has oil and natural gas resources?

Most of the North European Plain is rolling land with isolated hills or low mountains. In the Netherlands, people pumped out the water to reclaim land that once was covered by the sea. The **polders**, or drained areas, became rich farmland like many other parts of the North European Plain.

Other plains regions are located in parts of Italy and the Iberian Peninsula and among the mountain ranges of eastern Europe. The Hungarian Basin is a treeless stretch of land noted for agriculture and horse-raising. In general, fertile soils and ease of movement have made the plains regions the most populated areas in Europe.

MOVEMENT

Rivers and Lakes

Many of Europe's rivers flow from interior mountain and highland areas to the coasts. They provide water to irrigate farmland and to produce electricity. Today, as in the past, Europe's rivers play an important role as

transportation links between the interior and the coast. Europe does not have many large lakes similar to the Great Lakes in North America. A large number of lakes, however, are located in Sweden and Finland.

Rivers

Europe's rivers have differing characteristics. The rivers in Scandinavia are short and do not provide easy connections between cities. In the heartland of western and eastern Europe, however, relatively long rivers provide links between inland areas as well as to the sea. The Rhine is the most important river in western Europe. It flows from Switzerland, along the border of France and then north through Germany and the Netherlands, connecting many industrial cities to the busy port of Rotterdam on the North Sea. The Danube, which flows 1,776 miles (2,858 km) from Germany's Black Forest to the Black Sea, is eastern Europe's most important waterway. Each year, ships and barges carry millions of tons of cargo on the Danube. The major rivers of the Iberian Peninsula are too narrow and shallow



for large ships. Britain's Thames River, on the other hand, allows oceangoing ships to reach the port of London.

Lakes

Many lakes formed in the Scandinavian countries and Finland when melting glaciers retreated after the last Ice Age. Lakes cover about one-twelfth of Sweden, and Finland's interior plateau is called the Lake Plateau. Some of western and eastern Europe's most popular recreation areas center around lakes famous for their natural beauty. Located on the border between France and Switzerland, the clear blue waters of Lake Geneva mirror the Alpine peaks that surround it. The shores of Lake Como in northern Italy are lined with fertile vineyards and fine gardens. Hungary's Lake Balaton provides a scenic attraction among gently rolling hills and low mountains.

HUMAN/ENVIRONMENT INTERACTION

Natural Resources

Minerals rank among Europe's most important natural resources. Many mineral deposits are found in the plains and mountain areas of the European mainland. Others are located in the highlands of the British Isles and in the countries of southwestern Europe.

Iron and Coal

Europe, the birthplace of modern industry, has considerable amounts of coal and iron ore. These resources are considered the traditional necessities of an industrial society because they are used together to make steel. The major iron ore deposits are found in northeastern France, western Germany, northern Sweden, and the Balkan Peninsula. The major coal deposits are in the British Isles, the Ruhr district in western Germany, northern France, Belgium, the Czech Republic, and Poland.

Other Energy Sources

Resources that provide fuel for homes and factories in Europe vary widely. Peat, a kind of

vegetable matter usually composed of mosses, was traditionally burned as fuel in some western European homes. Today Europeans largely rely on such energy sources as coal, oil, gas, and nuclear and hydroelectric power. The discovery and development of vast oil and natural gas reserves under the North Sea in the 1960s and 1970s greatly increased western Europe's energy sources. Eastern Europe also has oil and natural gas resources, especially in Bulgaria and Romania. Fast-flowing streams and rivers throughout the continent provide good sources of power for electricity. The world's first tidal power plant began operating in France in the 1960s. This plant uses the power of incoming and outgoing tides to provide electricity.

Other Mineral Resources

Two of Europe's major resources are bauxite, a source of aluminum, and potash, an element used in fertilizer. Bauxite deposits are found in southern France, Hungary, and the former Yugoslav republics, while potash is located in France, Germany, and Spain. Other minerals mined in Europe include copper, lead, zinc, uranium, gold, and silver. Many of Europe's industrial and transportation centers developed near mineral deposits.

SECTION 1 ASSESSMENT

Checking for Understanding

- 1. Define** fjord, polder, peat.
- 2. Locating Places** Where are Europe's major mountain regions located?
- 3. Region** What are three characteristics of Europe's coastline?
- 4. Human/Environment Interaction** What are Europe's major energy sources?

Critical Thinking

- 5. Drawing Conclusions** How did Europe's rivers contribute to the development of its industries?

The Climate and Vegetation

SETTING THE SCENE

Read to Discover . . .

- how latitude and water bodies affect Europe's climate regions.
- why Europe's natural vegetation has changed over the centuries.

Key Terms

- mistral
- sirocco
- permafrost
- foehn
- avalanche
- chaparral

Identify and Locate

Gulf Stream, North Atlantic Drift, Climate regions: marine west coast, Mediterranean, humid continental, humid subtropical, steppe, subarctic, tundra, highland

Europe's climates vary from the tundra and subarctic regions of Iceland, Scandinavia, and Finland to the Mediterranean coasts of Italy, Spain, and Greece. Its diverse vegetation includes the dark fir and spruce trees of Germany's Black Forest as well as the short grasses and scattered shrubs of Spain's dry, central plateau, the Meseta. In Europe, as in other parts of the world, climate and vege-

tation patterns are closely linked. Europe's northern latitude and its location near large bodies of water are major factors in determining the diversity of its climates and vegetation.

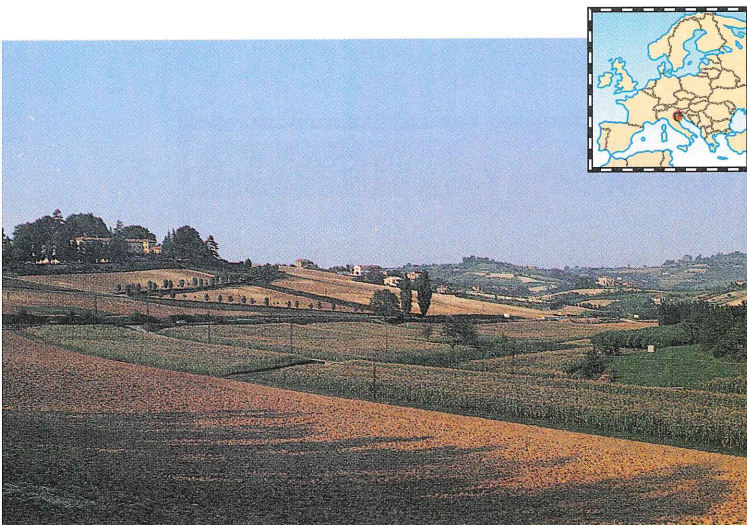
REGION

Europe's Climate Regions

In spite of Europe's northern location, most of the continent has a mild climate. The climate in many parts of Europe is milder than that of other places in the world at about the same latitude. For example, January temperatures in Frankfurt, Germany, are warmer than those in Winnipeg, Canada, or in Irkutsk in the Asian part of Russia. Yet all three cities are about the same distance from the Equator. Europe's peninsular location in relation to the sea helps explain its relatively mild climate.

Major Climate Regions

A large part of western Europe has a marine west coast climate. This climate region extends from the Arctic Circle to the Alps and from Ireland to the western parts of Poland, the Czech Republic, and Hungary. Places in this climate region enjoy moderate tempera-



Geographic Themes

Place: Po River Valley, Italy

The Po River valley of northern Italy is an area of productive farms and factories. *What two major factors help shape the diversity of Europe's climate and vegetation?*



tures in both summer and winter, and they receive between 20 and 40 inches (51 and 102 cm) of precipitation each year.

Northwest Europe's temperate, moist climate is caused by winds that blow across the continent from the Atlantic Ocean. The Gulf Stream and the North Atlantic Drift are powerful ocean currents that bring warm water from the Gulf of Mexico and the middle part of the Atlantic Ocean near the Equator to the west coast of Europe. Prevailing westerly winds, blowing over these currents, carry warm air across the continent. Even the Norwegian coast, which lies in northern Europe, remains ice-free in winter as a result of this climate pattern.

Most of southern Europe has a Mediterranean climate. Places in this part of the continent have hot, dry summers and mild, rainy winters. Southern Europe receives less yearly precipitation than northwestern Europe, because the Alpine mountain system and shifting air pressure belts during summer block the moist Atlantic winds. In winter, however, winds from the Mediterranean bring moderate rainfall. Local winds in this region sometimes cause changes in the normal weather pattern. The **mistral**, a strong, northerly wind from the Alps, may bring very cold air to southern France. **Siroccos**, hot winds from the North African deserts of Libya, can bring desert air and dust.

Most of eastern and northern Europe has a humid continental climate. This climate region includes the eastern parts of Poland, Hungary, the Czech Republic, Slovakia, Romania, and Bulgaria. The southern parts of Sweden and Finland also have a humid continental climate. Warm ocean currents have little influence on the climate because of the distance from the North Atlantic. Therefore, places in the humid continental climate region have greater differences between summer and winter temperatures than places in western and southern Europe.

Other Climates

Several other climates are found in small areas of Europe. A humid subtropical region



stretches from northern Italy to the central part of the Balkan Peninsula. Parts of Spain's Meseta have a steppe, or partly dry, climate.

Most of Iceland and the northern parts of Scandinavia and Finland have subarctic and tundra climates. Places in these climate regions have long, bitterly cold winters and short, cool summers. Tundra and subarctic regions have **permafrost**, soil that is often permanently frozen below the surface.

The Alps have a highland climate with generally colder temperatures and more pre-



These types of vegetation are closely linked to the climate regions. Over the centuries, changing climate patterns have affected vegetation, but people have caused even greater changes.

Natural Vegetation Patterns

Deciduous forests, trees that lose their leaves, are the natural vegetation of Europe's marine west coast climate region. These forests include ash, beech, elm, maple, and oak trees that provide spectacular autumn color. Coniferous forests, needle-leaf evergreen trees consisting of fir, larch, pine, and spruce, are common in northern Europe and in mountain areas. Mediterranean climates support broad-leaved evergreens, such as the cork oak tree and the olive tree. Such trees are well suited to the dry summers of this climate region. Their tough, waxy leaves conserve moisture. Unlike other broad-leaved trees, they do not lose their leaves in autumn.

Parts of the North European Plain consist of grasslands. The height of the grasses is related to the amount of rainfall in the region. Fertile areas with tall grasses cover most of the western plain. Dry areas where only short grasses grow are found in Hungary and parts of the Iberian Peninsula. The hot, dry summers of the Mediterranean area produce chaparral, or shrubs and short trees. The tundra region near Europe's Arctic coast supports little vegetation. Mosses, small shrubs, and colorful wildflowers cover the tundra during the brief summer, however. The upper slopes of the Alps resemble tundra and support similar kinds of vegetation.

precipitation than nearby lowland areas. Sudden changes can occur, however, when dry winds called **foehns** (FUHNZ) blow down from the mountains. Foehns can cause an **avalanche**, a mass of ice, snow, or rock sliding down a mountainside.

HUMAN/ENVIRONMENT INTERACTION

Europe's Vegetation

The natural vegetation of Europe consists of forests, grasslands, and tundra plants.

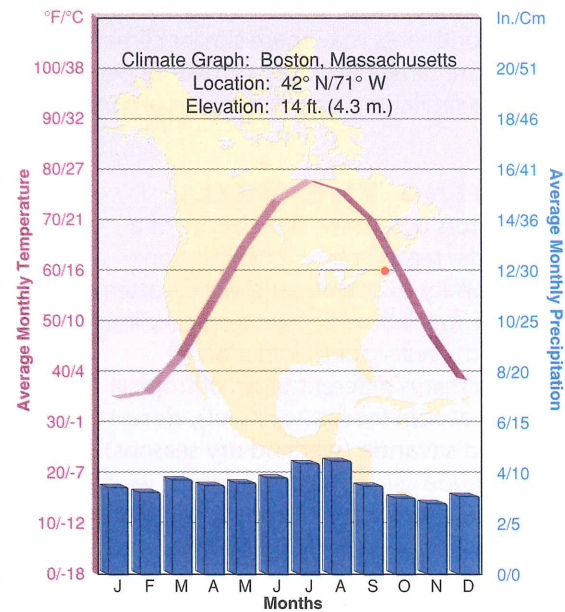
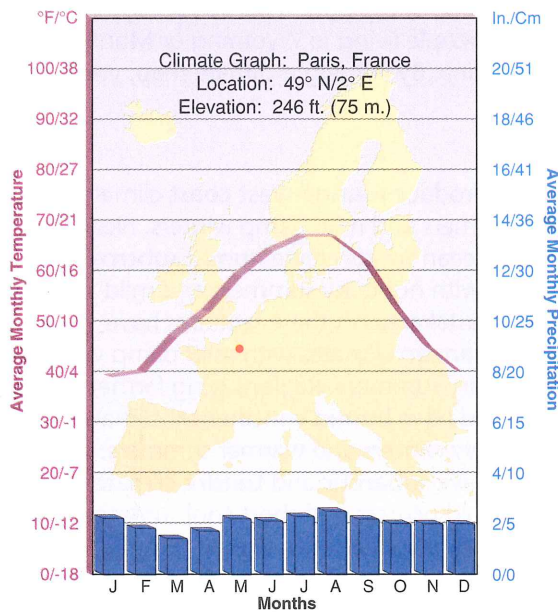
Human Interaction

Europeans cut down most of the natural forests that once covered large parts of the continent. They cleared the land for agriculture and industry and used the timber for fuel and building materials. Today, much of the once-forested land is occupied by urban areas and farms. Farmers also use parts of the tundra and high mountains as grazing land.

Great pine and spruce forests still cover parts of Scandinavia and Finland. Forests also cover parts of Poland, Slovakia, and the Czech

COMPARING CLIMATE REGIONS

Europe and the United States



Source: *World Weather Guide*, 1990

*lines measure temperature/bars measure precipitation



GRAPH STUDY

The climate graphs above show the average monthly temperatures and the average monthly precipitation in Paris, France, and in Boston, Massachusetts. *What is the average January temperature and precipitation in each city?*

Republic. Lumbering is an important industry in these European forest regions.

Some European governments regulate the cutting of trees to protect forests. In Germany's Black Forest, for example, new trees are planted to replace trees that are cut for timber.

Air pollution from Europe's industries and automobiles, however, poses a serious threat to forests as well as to other natural vegetation. In many industrialized countries, such as Germany, Belgium, Poland, and the Czech Republic, auto and factory pollution has brought widespread disaster to many woodlands. For example, scientists estimate that more than 20 percent of forests in the Czech Republic have been either killed or irreversibly damaged as a result of unregulated pollution.

SECTION 2 ASSESSMENT

Checking for Understanding

- Define** mistral, sirocco, permafrost, foehn, avalanche, chaparral.
- Locating Places** In which country is the Black Forest located?
- Region** What type of climate is found in northwestern Europe?

Critical Thinking

- Determining Cause and Effect** How has human interaction with the environment changed vegetation patterns in Europe?



MAP & GRAPH SKILLS

Reading a Climate Map

Climate is a main factor determining how people dress, live, work, and play in a particular region. People on different continents may share similar climates. For example, people living in Wyoming or Montana must survive the same harsh, dry climate as people in western China. By reading a climate map, you can discover these similarities and differences among regions.

REVIEWING THE SKILL

Several factors determine the climate of a region: latitude, temperature, precipitation, altitude, proximity to oceans, and wind patterns. Regions in the low latitudes have tropical climates, which are warm year-round. Variation in precipitation creates different types of tropical climates such as **rain forest** (very wet), **desert** (very dry), and **savanna** (wet and dry seasons).

Middle-latitude climates have seasonal variations in temperature. On the west coast of continents between the latitudes of 30° and 60° , ocean

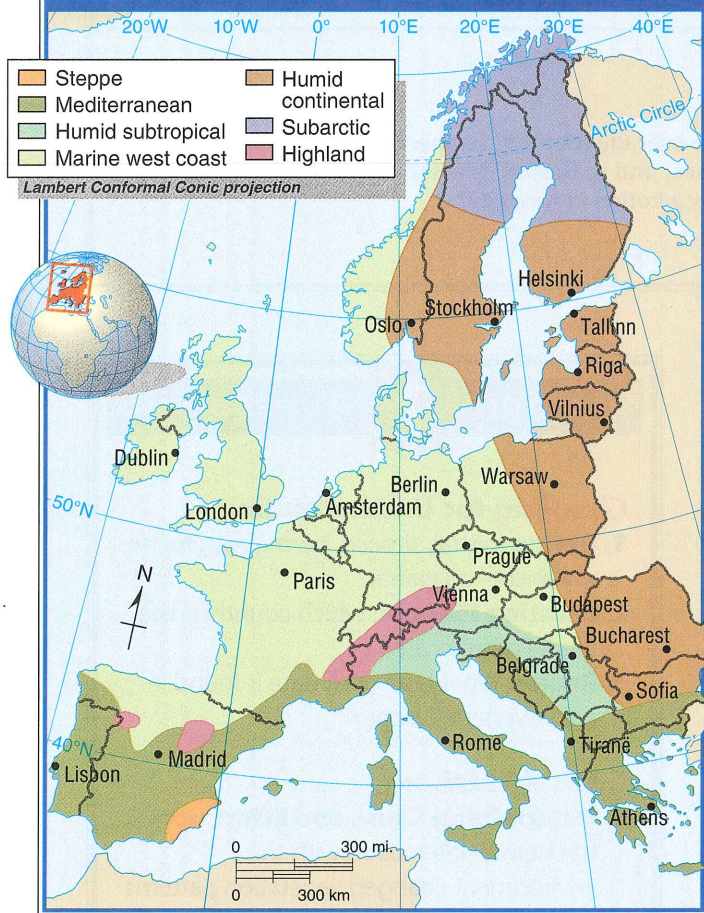
breezes produce **marine west coast** climates with cool summers and mild damp winters. Near the tropics, ocean winds create **humid subtropical** climates with hot rainy summers and mild winters. Other coastal areas in these latitudes have **Mediterranean** climates with mild damp winters and hot dry summers. Regions lying farther north and inland have **humid continental** climates with cold snowy winters and warmer summers. Polar regions have **subarctic** and **tundra** climates with bitterly cold winters and short cool summers.

Steppe (or semidesert) climates are dry, with more rainfall than deserts. **Highland**, or mountain, climates vary with elevation.

On a climate map, colors represent different climate regions. The map key explains the color code. To read a climate map:

- Identify the area covered in the map.
- Study the key to identify the climate regions on the map.
- Locate the regions in each climate zone.
- Draw conclusions about the climate similarities and differences among regions.

EUROPE: CLIMATE REGIONS



PRACTICING THE SKILL

Use the map to answer the following:

1. What geographic area does this map cover?

2. Name two European cities that share a Mediterranean climate.
3. What kind of climate is shared by most of the countries in northwestern Europe?
4. Which region has the coolest climate?
5. Describe the climate in Sofia and Riga.

For additional practice in reading a climate map, see Practicing Skills on page 236 of the Chapter 11 Assessment.



The **Glencoe Skillbuilder Interactive Workbook, Level 2** provides instruction and practice in key social studies skills.

1

SECTION

The Land

KEY TERMS

fjord (p. 223)
 polder (p. 228)
 peat (p. 229)

SUMMARY

- The continent of Europe is a huge peninsula that extends westward from the landmass of Eurasia.
- Europe has a long, irregular coastline with many peninsulas and islands surrounded by different seas.
- Europe consists of plains surrounded by mountains along its northern and southern edges.
- Rivers play an important role as transportation routes linking the interior of Europe with coastal ports.
- Europe has major coal, iron ore, oil, and natural gas deposits.



The Danube River at
 Budapest, Hungary

2

SECTION

**The Climate and
Vegetation**

KEY TERMS

mistral (p. 231)
 sirocco (p. 231)
 permafrost (p. 231)
 foehn (p. 232)
 avalanche (p. 232)
 chaparral (p. 232)

SUMMARY

- Because of warm ocean currents, much of Europe has milder climates than other parts of the world at similar northern latitudes.
- Northwestern Europe has a marine west coast climate, with moderate temperatures in both summer and winter.
- Most of southern Europe has a Mediterranean climate with mild, rainy winters and hot, dry summers.
- The interior of Europe experiences more extreme seasonal temperatures than other parts of the continent.
- Europe's natural vegetation is influenced by climate and human interaction.



Po River valley in
 northern Italy



Reviewing Key Terms

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

- fjord (p. 223)
- polder (p. 228)
- peat (p. 229)
- mistral (p. 231)
- sirocco (p. 231)
- permafrost (p. 231)
- foehns (p. 232)
- avalanche (p. 232)
- chaparral (p. 232)

SECTION 1

1. Some homes in western Europe burn _____ for fuel.
2. Along Norway's coast, a deep water-filled valley called a _____ may be used as a harbor.
3. A _____ is land that people in the Netherlands have reclaimed from the sea.

SECTION 2

4. The word _____ refers to ice, snow, or rock sliding down a mountainside.
5. A wind called the _____ brings desert air to the Mediterranean coast of western Europe.
6. A _____ is a dry wind in Alpine areas.
7. Cold air is brought from the Alps to southeastern France by the _____.
8. _____ is soil that often is permanently frozen below the surface.
9. The hot, dry summers of the Mediterranean area produce shrubs and short trees known as _____.

Reviewing Facts

SECTION 1

10. Why is Europe called "a peninsula of peninsulas"?
11. Which mountains form the largest part of the Alpine system?

12. Where are Europe's major iron ore deposits located?

SECTION 2

13. How do the Gulf Stream and the North Atlantic Drift affect Europe's climate?
14. How has northwestern Europe's natural vegetation changed over time?

Critical Thinking

15. **Drawing Conclusions** How might geographical factors have shaped Europe's diversity of cultures?
16. **Expressing Problems Clearly** How has human interaction affected Europe's environment?



Geographic Themes

17. **Movement** How have rivers aided Europe's economic development?
18. **Region** What vegetation is found in the Mediterranean climate region?



Practicing Skills

Reading a Climate Map

Refer to the climate map on page 234.

19. Which climate regions do not occur in Europe? Explain why.
20. Compare climates in northern Europe and southern Europe.

Using the Unit Atlas

Refer to the physical geography section of the Unit Atlas on pages 216–217.

21. What body of water affects the climate of northwestern Europe?
22. What points in Europe are higher than 5,000 feet (1,500 m) above sea level?

Projects

Individual Activity

Choose a city in Europe and prepare typical January and July weather forecasts for that location. Present your forecasts to the class using weather maps, charts, or graphs.

Cooperative Learning Activity

Work in groups of four to research one of the regions of Europe described in this chapter. Each group member should be responsible for one of the following topics: land features, water bodies, plants and animals, or human/environment interaction. Combine the reports to make a booklet about the region.

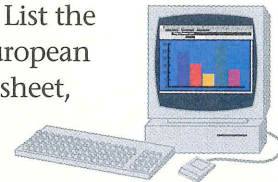
Writing About Geography

Description Imagine that you are in charge of an advertising campaign to attract tourists

to Europe. Choose an area that you have studied in this chapter and have described in your journal. Write a 30-second television commercial that will encourage American tourists to visit that place. If possible, videotape your commercial.

Technology Activity

Using a Spreadsheet List the names of at least ten European countries onto a spreadsheet, beginning with cell A2 and continuing down the A column. Then use a world atlas to find the highest point in each country. List the height measurements in column B, beginning with cell B2. Use the graphics feature to make a bar graph that shows, at a glance, a comparison of the highest points.



Locating Places

EUROPE: PHYSICAL GEOGRAPHY

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

1. British Isles
2. Rhine River
3. Sicily
4. Apennine Mountains
5. Danube River
6. Mediterranean Sea
7. Scandinavian Peninsula
8. Crete
9. Iberian Peninsula
10. Balkan Peninsula

