



# Africa South of the Sahara

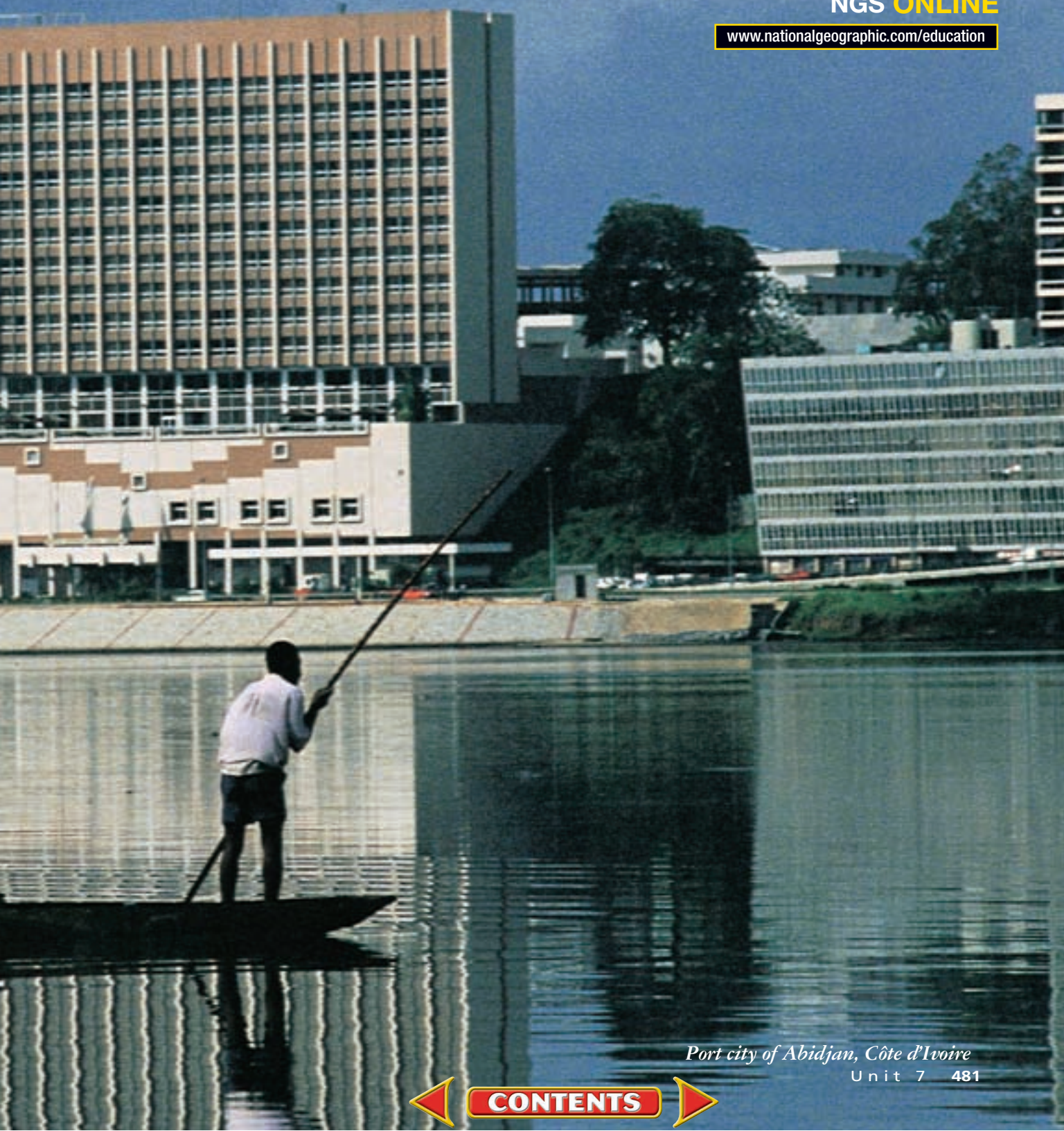
## WHY IT'S IMPORTANT —

Africa south of the Sahara presents a rich mosaic of ethnic groups who speak hundreds of languages. Over the past 50 years, a number of countries in the region have gained independence. Today they are working toward greater political and economic unity. They are also strengthening their voice in global affairs through such international organizations as the United Nations.



### World Regions Video

To learn more about Africa south of the Sahara and its impact on your world, view the World Regions video "Africa South of the Sahara."



*Port city of Abidjan, Côte d'Ivoire*

Unit 7 481

 **CONTENTS** 

## *What Makes Africa South of the Sahara a Region?*

**S**traddling the Equator, Africa south of the Sahara encompasses about 9.5 million square miles (24.6 million sq. km) and nearly 50 countries. It is a region of immense plateaus that rise, like steps, from west to east across the continent. Several great rivers flow across this landscape. As the rivers journey to the sea, they cascade from one plateau to the next, creating spectacular waterfalls.

The Great Rift Valley, formed by the movement of the Earth's crust, slices through the plateaus of eastern Africa. Along the valley's rim stand some of the region's isolated mountain peaks, including the highest: snowcapped Kilimanjaro.

Most of this region lies within the Tropics. Closest to the Equator are steamy rain forests, second in size only to those of the Amazon River basin. At higher latitudes lie grasslands, home to many of Africa's famous wild animals. Beyond the grasslands, deserts stretch out under the fierce African sun.



**1** **Sculpted sand dunes** rise in the Namib, one of Africa's deserts. The Namib lies in western Namibia, bordering the Atlantic Ocean. Eastern Namibia is home to another desert, the Kalahari, which stretches far into neighboring Botswana.





**2** Covered in mineral-rich mud, a South African miner drills for gold. In the late 1800s, huge deposits of gold and diamonds were discovered in South Africa. Mining has made this country the wealthiest and most developed in the region.

**3** A rainbow dances in the spray of Victoria Falls, on the Zambezi River. The river plummets 355 feet (108 m) as it spills over the edge of a steep cliff. The spray and the roar prompted local people to call the falls *Mosi oa Tunya*—“smoke that thunders.”

**4** Like regal lords, two male lions stride across an African savanna, or tropical grassland. Some savannas support huge herds of antelope, buffalo, wildebeests, and zebras, which are hunted by lions, cheetahs, and other predators.

## *Rich in Resources and Challenges*

Many scientists believe that the human race originated in Africa millions of years ago. Ever since, the lands south of the Sahara have been home to diverse peoples, cultures, and empires. Europeans arrived in the 1400s and quickly began to exploit the region's abundant natural resources. By the 1800s, Africa was a patchwork of European colonies. Colonial rule ended in the twentieth century, leaving independent, but struggling, nations in its wake.

In Africa south of the Sahara, most of the people depend on small-scale agriculture or herding for their livelihood. Drought, disease, illiteracy, political instability, and poor transportation systems make economic development difficult in this region—the poorest of all world regions.



**1** A proud heritage is reflected in the face of a young Afar woman. The Afar inhabit north-eastern Ethiopia, an ethnically complex country in which about 70 different languages and 200 dialects are spoken. The nomadic Afar make their living by herding livestock.





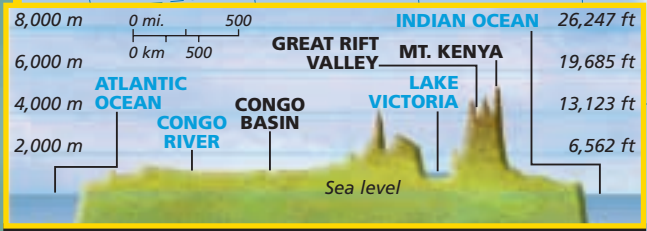
**2** **Mud-brick walls** of an old mosque rise behind a busy market in Djenné, Mali. Five centuries ago, Djenné was a center of commerce and Muslim scholarship in the Songhai Empire, a wealthy and powerful trading kingdom.

**3** **Table Mountain** rises steeply behind Cape Town, in South Africa. The city was established in 1652 as a port of call for Dutch ships sailing from Europe to India. Today, Cape Town is an important shipping center as well as the legislative capital of South Africa.

**4** **Waist-deep in tea plants**, a Kenyan man picks leaves that will go into making one of the world's most popular drinks. Most farms in Africa are small, but Kenya has several large plantations that grow cash crops of tea and coffee for export.

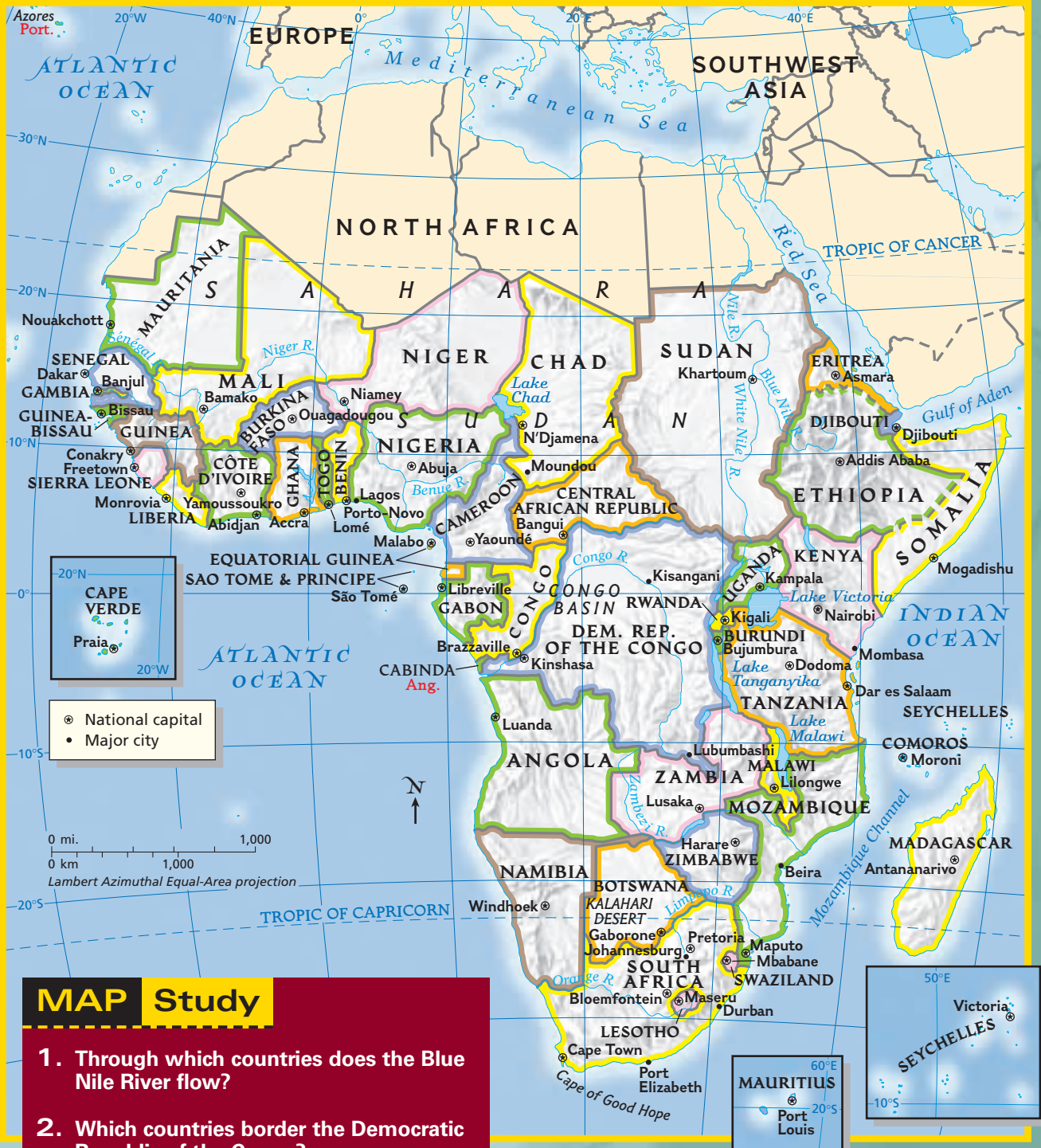
*Africa South of the Sahara*

**PHYSICAL**



**Elevation Profile**

**POLITICAL**



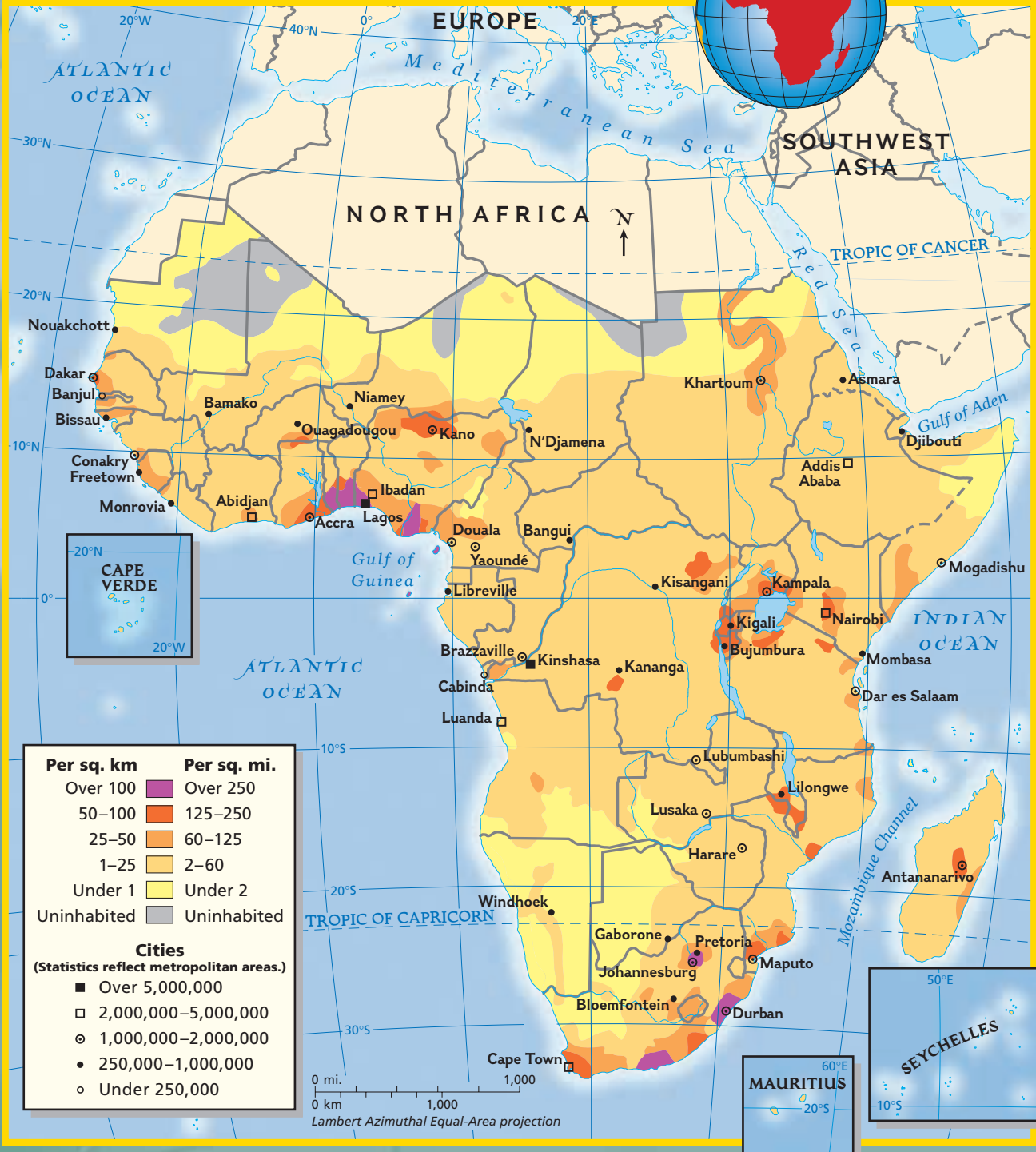
**MAP Study**

1. Through which countries does the Blue Nile River flow?
2. Which countries border the Democratic Republic of the Congo?



*Africa South of the Sahara*

POPULATION DENSITY



**ECONOMIC ACTIVITY**











































**MAP Study**









































1. What natural resources are located in South Africa?
2. What are the centers of manufacturing and trade in Africa south of the Sahara?

### *Africa South of the Sahara*

#### COUNTRY PROFILES

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
<b>ANGOLA</b>  Luanda	 Portuguese, Local Languages	12,300,000 26 per sq. mi. 10 per sq. km	481,351 sq. mi. 1,246,699 sq. km	 Crude Oil	 Machinery	Kwanza	Republic
<b>BENIN</b>  Porto-Novo	 French, Fon, Yoruba	6,600,000 152 per sq. mi. 59 per sq. km	43,483 sq. mi. 112,621 sq. km	 Cotton	 Foods	CFA Franc	Republic
<b>BOTSWANA</b>  Gaborone	 English, Setswana	1,600,000 7 per sq. mi. 3 per sq. km	224,606 sq. mi. 581,730 sq. km	 Diamonds	 Foods	Pula	Republic
<b>BURKINA FASO</b>  Ouagadougou	 French, Local Languages	12,300,000 116 per sq. mi. 45 per sq. km	105,792 sq. mi. 274,000 sq. km	 Cotton	 Machinery	CFA Franc	Republic
<b>BURUNDI</b>  Bujumbura	 Kirundi, French	6,200,000 519 per sq. mi. 200 per sq. km	10,745 sq. mi. 27,830 sq. km	 Coffee	 Machinery	Burundi Franc	Republic
<b>CAMEROON</b>  Yaounde	 French, English, Local Languages	15,800,000 86 per sq. mi. 33 per sq. km	183,568 sq. mi. 475,442 sq. km	 Crude Oil	 Machinery	CFA Franc	Republic
<b>CAPE VERDE</b>  Praia	 Portuguese, Crioulo	400,000 287 per sq. mi. 111 per sq. km	1,556 sq. mi. 4,030 sq. km	 Shoes	 Foods	Cape Verdean Escudo	Republic
<b>CENTRAL AFRICAN REPUBLIC</b>  Bangui	 French, Sango, Arabic, Hunsu	3,600,000 15 per sq. mi. 7 per sq. km	240,533 sq. mi. 622,980 sq. km	 Diamonds	 Foods	CFA Franc	Republic
<b>CHAD</b>  N'Djamena	 French, Arabic, Sara, Sango	8,700,000 18 per sq. mi. 7 per sq. km	495,753 sq. mi. 1,283,948 sq. km	 Cotton	 Machinery	CFA Franc	Republic
<b>COMOROS</b>  Moroni	 Arabic, French, Comoran	600,000 692 per sq. mi. 267 per sq. km	861 sq. mi. 2,230 sq. km	 Vanilla	 Rice	CFA Franc	Republic

\* COUNTRIES AND FLAGS NOT DRAWN TO SCALE

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
 <b>CONGO</b> Brazzaville	 French, Lingala, Monokutuba	3,100,000 24 per sq. mi. 9 per sq. km	132,046 sq. mi. 341,999 sq. km	 Crude Oil	 Machinery	CFA Franc	Republic
 <b>CONGO, DEMOCRATIC REPUBLIC OF THE</b> Kinshasa	 French, Lingala, Kingwana	53,600,000 59 per sq. mi. 23 per sq. km	905,351 sq. mi. 2,344,859 sq. km	 Diamonds	 Manufactured Goods	Congolese Franc	Republic
 <b>CÔTE D'IVOIRE</b> Yamoussoukro Abidjan	 French, Dioula	16,400,000 132 per sq. mi. 60 per sq. km	124,502 sq. mi. 322,460 sq. km	 Cocoa	 Foods	CFA Franc	Republic
 <b>DJIBOUTI</b> Djibouti	 French, Arabic	600,000 71 per sq. mi. 27 per sq. km	8,958 sq. mi. 23,200 sq. km	 Hides and Skins	 Foods	Djibouti Franc	Republic
 <b>EQUATORIAL GUINEA</b> Malabo	 Spanish, French, Fang, Bubi, Ibo	500,000 43 per sq. mi. 17 per sq. km	10,830 sq. mi. 28,050 sq. km	 Petroleum	 Machinery	CFA Franc	Republic
 <b>ERITREA</b> Asmara	 Afar, Amharic, Arabic, Tigre	4,300,000 95 per sq. mi. 37 per sq. km	45,405 sq. mi. 117,599 sq. km	 Livestock	 Processed Foods	Nakfa	Republic
 <b>ETHIOPIA</b> Addis Ababa	 Amharic, Tigrinya, Orominga	65,400,000 153 per sq. mi. 59 per sq. km	426,371 sq. mi. 1,104,301 sq. km	 Coffee	 Foods and Livestock	Birr	Federal Republic
 <b>GABON</b> Libreville	 French, Local Languages	1,200,000 12 per sq. mi. 4 per sq. km	103,347 sq. mi. 267,667 sq. km	 Crude Oil	 Machinery	CFA Franc	Republic
 <b>GAMBIA</b> Banjul	 English, Mandinka, Fula	1,400,000 323 per sq. mi. 125 per sq. km	4,363 sq. mi. 11,300 sq. km	 Peanuts	 Foods	Dalasi	Republic
 <b>GHANA</b> Accra	 English, Local Languages	19,900,000 216 per sq. mi. 83 per sq. km	92,100 sq. mi. 238,537 sq. km	 Gold	 Machinery	Cedi	Republic

\* COUNTRIES AND FLAGS NOT DRAWN TO SCALE









































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#### COUNTRY PROFILES

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
<b>GUINEA</b> 	 French, Local Languages	7,600,000 80 per sq.mi. 31 per sq.km	94,927 sq.mi. 245,861 sq.km	 Bauxite	 Petroleum Products	Guinean Franc	Republic
<b>GUINEA-BISSAU</b> 	 Portuguese, Crioulo, Fula	1,200,000 88 per sq.mi. 34 per sq.km	13,946 sq.mi. 36,120 sq.km	 Cashews	 Foods	CFA Franc	Republic
<b>KENYA</b> 	 English, Swahili	29,800,000 133 per sq.mi. 51 per sq.km	224,081 sq.mi. 580,370 sq.km	 Tea	 Machinery	Kenyan Shilling	Republic
<b>LESOTHO</b> 	 English, Sesotho, Zulu, Xhosa	2,200,000 186 per sq.mi. 72 per sq.km	11,718 sq.mi. 30,350 sq.km	 Clothing	 Corn	Loti	Constitutional Monarchy
<b>LIBERIA</b> 	 English, Local Languages	3,200,000 75 per sq.mi. 29 per sq.km	43,000 sq.mi. 111,369 sq.km	 Diamonds	 Natural Gas	Liberian Dollar	Republic
<b>MADAGASCAR</b> 	 French, Malagasy	16,400,000 71 per sq.mi. 27 per sq.km	226,656 sq.mi. 587,039 sq.km	 Coffee	 Machinery	Malagasy Franc	Republic
<b>MALAWI</b> 	 Chewa, English	10,500,000 231 per sq.mi. 89 per sq.km	45,745 sq.mi. 118,480 sq.km	 Tobacco	 Foods	Kwacha	Republic
<b>MALI</b> 	 French, Bambara	11,000,000 23 per sq.mi. 9 per sq.km	478,838 sq.mi. 1,240,307 sq.km	 Cotton	 Machinery	CFA Franc	Republic
<b>MAURITANIA</b> 	 Hasaniya Arabic, Wolof	2,700,000 7 per sq.mi. 3 per sq.km	395,954 sq.mi. 1,025,521 sq.km	 Fish	 Foods	Ouguiya	Islamic Republic
<b>MAURITIUS</b> 	 English, Creole, Bhojpuri, French	1,200,000 1,520 per sq.mi. 587 per sq.km	788 sq.mi. 2,040 sq.km	 Sugar	 Foods	Mauritian Rupee	Republic

\* COUNTRIES AND FLAGS NOT DRAWN TO SCALE

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
 <b>MOZAMBIQUE</b> Maputo	 <b>Portuguese, Local Languages</b>	<b>19,400,000</b> 63 per sq.mi. 24 per sq.km	<b>309,494 sq.mi.</b> <b>801,598 sq.km</b>	 <b>Cashews</b>	 <b>Foods</b>	<b>Metical</b>	<b>Republic</b>
 <b>NAMIBIA</b> Windhoek	 <b>English, Afrikaans, Local Languages</b>	<b>1,800,000</b> 6 per sq.mi. 3 per sq.km	<b>318,259 sq.mi.</b> <b>824,291 sq.km</b>	 <b>Diamonds</b>	 <b>Construction Materials</b>	<b>Namibian Dollar</b>	<b>Republic</b>
 <b>NIGER</b> Niamey	 <b>French, Hausa, Djerma</b>	<b>10,400,000</b> 21 per sq.mi. 8 per sq.km	<b>489,189 sq.mi.</b> <b>1,267,000 sq.km</b>	 <b>Uranium</b>	 <b>Manufactured Goods</b>	<b>CFA Franc</b>	<b>Republic</b>
 <b>NIGERIA</b> Abuja	 <b>English, Hausa, Yoruba, Igbo</b>	<b>126,600,000</b> 355 per sq.mi. 137 per sq.km	<b>356,668 sq.mi.</b> <b>923,770 sq.km</b>	 <b>Petroleum</b>	 <b>Machinery</b>	<b>Naira</b>	<b>Federal Republic</b>
 <b>RWANDA</b> Kigali	 <b>Kinyarwanda, French, English</b>	<b>7,300,000</b> 719 per sq.mi. 278 per sq.km	<b>10,170 sq.mi.</b> <b>26,340 sq.km</b>	 <b>Coffee</b>	 <b>Foods</b>	<b>Rwanda Franc</b>	<b>Republic</b>
 <b>SAO TOME AND PRINCIPE</b> São Tomé	 <b>Portuguese, Crioulo</b>	<b>260,000</b> 445 per sq.mi. 172 per sq.km	<b>371 sq.mi.</b> <b>961 sq.km</b>	 <b>Cocoa</b>	 <b>Textiles</b>	<b>Dobra</b>	<b>Republic</b>
 <b>SENEGAL</b> Dakar	 <b>French, Wolof, Pulaar, Diola</b>	<b>9,700,000</b> 127 per sq.mi. 49 per sq.km	<b>75,954 sq.mi.</b> <b>196,721 sq.km</b>	 <b>Fish</b>	 <b>Foods</b>	<b>CFA Franc</b>	<b>Republic</b>
 <b>SEYCHELLES</b> Victoria	 <b>English, French, Creole</b>	<b>100,000</b> 449 per sq.mi. 173 per sq.km	<b>174 sq.mi.</b> <b>451 sq.km</b>	 <b>Fish</b>	 <b>Foods</b>	<b>Seychelles Ruppee</b>	<b>Republic</b>
 <b>SIERRA LEONE</b> Freetown	 <b>English, Mende, Temne, Krio</b>	<b>5,400,000</b> 196 per sq.mi. 76 per sq.km	<b>27,699 sq.mi.</b> <b>71,740 sq.km</b>	 <b>Diamonds</b>	 <b>Foods</b>	<b>Leone</b>	<b>Republic</b>
 <b>SOMALIA</b> Mogadishu	 <b>Somali, Arabic</b>	<b>7,500,000</b> 30 per sq.mi. 12 per sq.km	<b>246,201 sq.mi.</b> <b>637,657 sq.km</b>	 <b>Livestock</b>	 <b>Textiles</b>	<b>Somali Shilling</b>	<b>Republic</b>

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#### COUNTRY PROFILES

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<b>SOUTH AFRICA</b> 	 Afrikaans, English, Zulu	43,600,000 92 per sq.mi. 36 per sq.km	471,444 sq.mi. 1,221,038 sq.km	 Gold	 Transport Equipment	Rand	Republic
<b>SUDAN</b> 	 Arabic, Nubian, Ta Bedawie	31,800,000 33 per sq.mi. 13 per sq.km	967,494 sq.mi. 2,505,809 sq.km	 Cotton	 Petroleum Products	Sudanese Pound	Republic
<b>SWAZILAND</b> 	 English, Swazi	1,100,000 165 per sq.mi. 64 per sq.km	6,703 sq.mi. 17,361 sq.km	 Soft Drink Concentrates	 Machinery	Lilangeni	Monarchy
<b>TANZANIA</b> 	 Swahili, English	36,200,000 99 per sq.mi. 38 per sq.km	364,900 sq.mi. 945,087 sq.km	 Coffee	 Machinery	Tanzanian Shilling	Republic
<b>TOGO</b> 	 French, Ewe, Mina, Kabye	5,200,000 235 per sq.mi. 91 per sq.km	21,927 sq.mi. 56,791 sq.km	 Phosphates	 Manufactured Goods	CFA Franc	Republic
<b>UGANDA</b> 	 English, Ganda	24,000,000 258 per sq.mi. 100 per sq.km	93,066 sq.mi. 241,041 sq.km	 Coffee	 Machinery	Ugandan Shilling	Republic
<b>ZAMBIA</b> 	 English, Local Languages	9,800,000 34 per sq.mi. 13 per sq.km	290,583 sq.mi. 752,610 sq.km	 Copper	 Manufactured Goods	Kwacha	Republic
<b>ZIMBABWE</b> 	 English, Shona, Sindebele	11,400,000 75 per sq.mi. 30 per sq.km	150,873 sq.mi. 390,761 sq.km	 Gold	 Machinery	Zimbabwean Dollar	Republic

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► Crowd in Burundi market wearing colorful traditional clothing



NATIONAL  
GEOGRAPHIC  
SOCIETY





# GLOBAL CONNECTION

AFRICA SOUTH OF THE SAHARA  
AND THE UNITED STATES



# ROOTS OF JAZZ

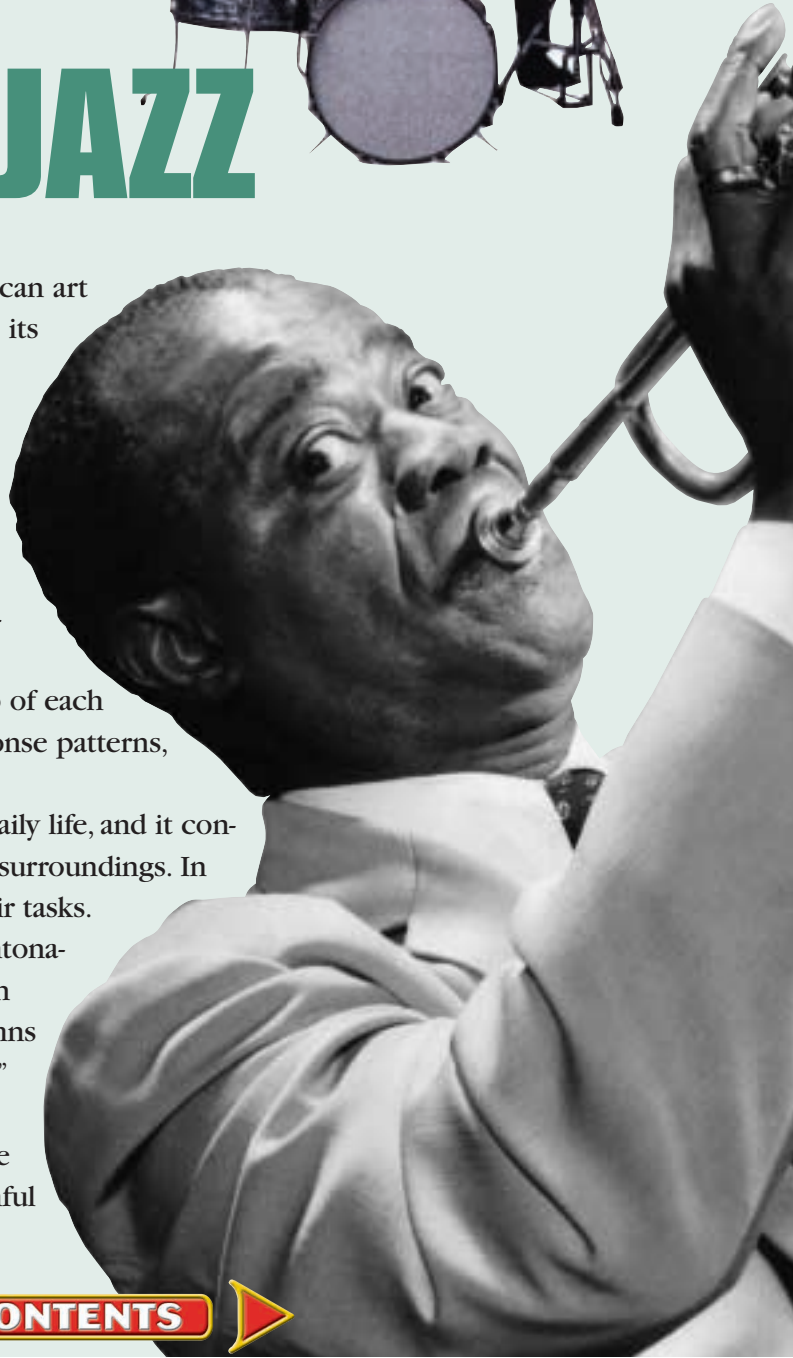


It's been called the only truly American art form. However, jazz music can trace its roots straight back to Africa.

Beginning in the 1600s, thousands of black Africans, mostly from West Africa, were forcibly brought to the American colonies as slaves. Torn from their homelands, these enslaved Africans held tightly to the only possessions they retained—their cultural traditions, especially their music. That music had strong, complex rhythms, with layers of different beats built on top of each other. Other characteristics included call-and-response patterns, sliding-pitch tones, and improvisation.

In Africa, music had been an essential part of daily life, and it continued to be for the enslaved people in their new surroundings. In the fields, they sang to relieve the drudgery of their tasks. Their work songs echoed with the rhythms and intonations of their homelands. Forced to adopt Christian beliefs, the enslaved people altered traditional hymns to suit their own tastes, creating soulful “spirituals.”

After the Civil War, work songs, spirituals, and other influences came together to give birth to the blues—simple, repeated harmonies set to a mournful





scale. Close on the heels of the blues came ragtime—a jaunty style of piano music with a distinctly African rhythmic undertone.

It was in New Orleans that blues and ragtime blended with Creole, European, and other influences to become jazz. By 1917, the new music echoed throughout New Orleans.

In the 1920s, the center of jazz began shifting northward, first to Chicago and then to New York. In the decades that followed, jazz underwent many changes. New forms of jazz emerged, such as big band swing, bebop, and cool jazz. Jazz continues to develop today. No matter what variations appear, however, the roots of jazz remain firmly planted in Africa.



▲ West African musicians

◀ American jazz innovator Louis Armstrong

CHAPTER

# 20

# The Physical Geography of Africa South of the Sahara

## GeoJournal

As you read this chapter, use your journal to compare and contrast the physical geography of Africa south of the Sahara with that of Latin America. List similarities and differences in your journal.



**Chapter Overview** Visit the **Glencoe World Geography** Web site at [tx.geography.glencoe.com](http://tx.geography.glencoe.com) and click on Chapter Overviews—Chapter 20 to preview information about the physical geography of the region.

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**CONTENTS**

## Guide to Reading

### Consider What You Know

Africa south of the Sahara is known throughout the world for its extraordinary physical geography as well as its wildlife. What animals do you associate with the region? What landforms do you think are present in the places where those animals live?

### Read to Find Out

- What are the major landforms in Africa south of the Sahara?
- How does the land affect the water systems of Africa south of the Sahara?
- What are the region's most important natural resources?

### Terms to Know

- escarpment
- cataract
- rift valley
- fault
- delta
- estuary

### Places to Locate

- Ruwenzori Mountains
- Drakensberg Range
- Great Rift Valley
- Lake Victoria
- Niger River
- Zambezi River
- Congo River

◀ Mt. Mikeno, Democratic Republic of the Congo

# The Land



## A Geographic View

### Across the Great Rift

*The road has risen swiftly as we leave Nakuru, a town that sits just south of the Equator in Kenya. . . . We drive beneath cool gray rain clouds. . . . Abruptly the clouds break, and before our windshield the red earth drops away. A gash 700 meters (2,300 feet) deep and 16 kilometers (ten miles) across—an offshoot of Africa's Great Rift—lies before us. Far to the left, stretching beyond the horizon, I see a glimmering expanse of water—Lake Victoria.*

—Curt Stager, "Africa's Great Rift,"  
National Geographic, May 1990



Lake Victoria, East Africa

Nothing in his research prepared biologist Curt Stager for the breathtaking views on the road out of Nakuru, Kenya, in East Africa. Along the Great Rift, long troughs and deep lakes slash the land in the shadow of majestic volcanic mountains. In this section you will read about the dramatic physical features and the rich natural resources of Africa south of Sahara.

## Landforms

Africa south of the Sahara is an immense region covering about 9.5 million square miles (24.6 million sq. km). Bounded on the north by the Sahara, the region extends to the sea in all other directions. To its northeast is the Red Sea, to its west the Atlantic Ocean, and to its east the Indian Ocean. On the southern edge of Africa south of the Sahara, the waters of the Atlantic and Indian Oceans meet at the Cape of Good Hope. This vast region embraces a broad variety of physical features.

## Plateaus, Highlands, and Mountains

Seen from space, Africa south of the Sahara might be described as a series of steps. These steps are actually plateaus that rise in elevation from the coast inland and from west to east. Ranging in elevation from 500 feet (152 m) in the west to 8,000 feet (2,438 m) or more in the east, the plateaus are outcroppings of the solid rock that makes up most of Africa.

The edges of the continent's plateaus are marked by **escarpments**—steep, often jagged slopes or cliffs. Most of the escarpments are located less than 20 miles (32 km) from the coast. Rivers crossing the plateaus plunge suddenly down the sides of the escarpments in **cataracts**, or towering waterfalls.

Although Africa's overall surface is higher in average elevation than that of every other continent, it has relatively few mountains. Most African mountains dot the Eastern Highlands, an area that stretches from Ethiopia almost to the Cape of Good Hope. These highland areas include the Ethiopian Highlands as well as volcanic summits, such as Kilimanjaro and Mount Kenya.

West of the Eastern Highlands, the **Ruwenzori** (ROO•wuhn•ZOHR•ee) **Mountains** divide Uganda and the Democratic Republic of the Congo. Covered with snow and cloaked in clouds, these mountains, also called the “Mountains of the Moon,” have fascinated observers since ancient times. The writer Christopher Ondaatje, who traveled to East Africa in the 1990s, recorded these impressions of the legendary range:

“One can feel the water in the air. It is damp, dank, grey, and cold. . . . [T]he clouds seldom clear so the upper slopes remain veiled. Still, we were constantly aware of them, a powerful presence brooding over the surrounding countryside.”

Christopher Ondaatje,  
*Journey to the Source of  
the Nile*, 1999

Moist air from the Indian Ocean creates the clouds that wrap around the Ruwenzoris and give these mountains their wondrous appearance.

Farther south are the Cape Mountains, which include the **Drakensberg Range** in South Africa

and Lesotho. These mountains rise to more than 11,000 feet (3,353 m) and form part of the sharp escarpment along the southern edge of the continent.

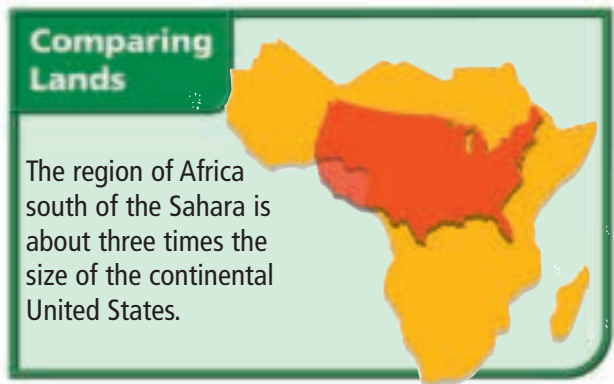
## The Great Rift Valley

An amazing natural wonder known as the **Great Rift Valley** stretches from Syria in Southwest Asia to Mozambique (MOH•zahn•BEEK) in the southeastern part of Africa. A **rift valley** is a large crack in the earth's surface formed by shifting tectonic plates. Millions of years ago, plate movements created the system of **faults** or fractures in the earth's crust within which the Great Rift Valley lies. Volcanic eruptions as well as earthquakes helped create the valley's striking landscape, and they continue to shape it today.

In East Africa, the Great Rift Valley forms two branches, with volcanic mountains rising at its edges and deep lakes that run parallel to its length. The main volcanic cones, among them Kilimanjaro, are found along the eastern branch. Lake Tanganyika, one of the deepest and longest freshwater lakes in the world, lies on the western branch. To the south is Lake Malawi, a mountain-rimmed lake that looks much like a fjord. Like the glacier-cut valleys of seawater in northern Europe, Lake Malawi lies well below the land surrounding it. It is also very deep, its floor dropping to more than 2,300 feet (700 m) at its deepest point.

## Water Systems

The land has influenced the water systems of Africa south of the Sahara in important ways. The lakes and rivers that drain the region are located in huge basins formed millions of years ago by the uplifting of the land. The great rivers of Africa





Africa South of the Sahara: Physical/Political



**Geography Skills for Life**

- 1. Interpreting Maps** What country is completely surrounded by South Africa?
- 2. Applying Geography Skills** Where are areas of highest elevation in Africa south of the Sahara?

Find NGS online map resources @ [www.nationalgeographic.com/maps](http://www.nationalgeographic.com/maps)

originate high in the plateaus and eventually make their way to the sea. Escarpments and ridges, also created long ago by movements of the earth's crust, frequently break the rivers' paths to the ocean with rapids, waterfalls, and cataracts. This broken landscape makes it impossible to navigate most of the region's rivers from mouth to source.

## Land of Lakes

Most of the region's lakes, including Lakes Tanganyika and Malawi, are near the Great Rift Valley. **Lake Victoria**, the largest lake in Africa, lies between the eastern and western branches of the Great Rift. It is the world's second largest freshwater lake, after Lake Superior in North America. Lake Victoria is the source of the White Nile River. Despite its large size, Lake Victoria is comparatively shallow at only 270 feet (82 m) deep.

Lake Chad, outside the Great Rift Valley in west-central Africa, is threatened with extinction. Although fed by three large streams, landlocked

Lake Chad is shrinking. Droughts in the 1970s completely dried up the northern portion of the lake, and the water level continues to be shallow even during years when rainfall is normal. Because of the arid climate, much of the lake's water evaporates or seeps into the ground.

## Economics

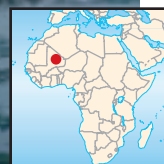
### A Lake Meets Many Needs

Lake Volta in West Africa ranks among the largest human-made lakes in the world. This artificial lake was created in the 1960s by damming the Volta River south of Ajena, Ghana. The new lake flooded more than 700 villages, forcing more than 70,000 people to find new places to live.

Although the dam was originally built as part of a hydroelectric project to provide power to an aluminum plant, the people of Ghana today benefit from the lake in many ways. Capable of storing 124 million acre-feet (153 billion cubic m) of water, Lake Volta supplies irrigation for farming in the



## World Explorer



### Geography

### Skills for Life

**Niger River** The Niger River spreads into a vast inland delta. The river is important for farming, travel, trade, and fishing (inset).

**Place** What are the longest rivers in Africa south of the Sahara?

CONTENTS

plains below the dam and is well stocked with fish. In addition to supplying power to the aluminum industry in the port of Tema, the hydroelectric plant now generates electricity used throughout Ghana.

## River Basins

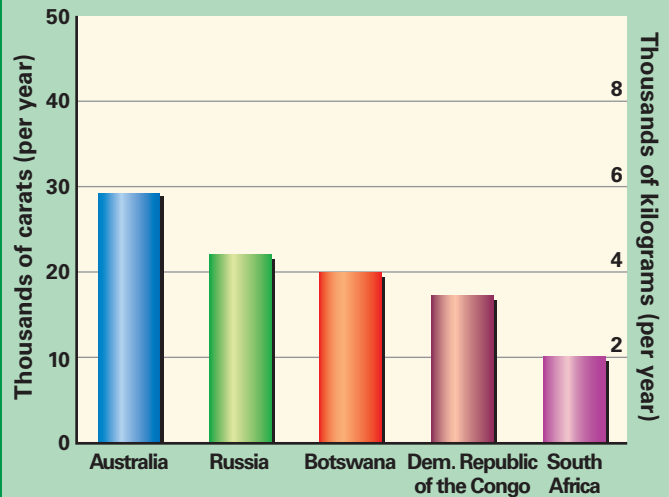
The **Niger** (NY•juhr) **River** is known by many names along its course, but all its names have roughly the same meaning—"great river." The Niger is the main artery in western Africa. Originating in the highlands of Guinea only 150 miles (241 km) inland from the Atlantic Ocean, the river forms a great arc. It flows about 2,600 miles (4,184 km) northeast and then curves southeast to meet the Atlantic Ocean at the coast of Nigeria. In addition to being vitally important to agriculture, the Niger River is a major means of transportation for people in the region. It also provides a leisurely means of travel for tourists.

This great river does not flow as one well-defined stream into the sea. At Aboh in southern Nigeria, the Niger splits into a vast inland **delta**, a triangular section of land formed by sand and silt carried downriver. The Niger Delta stretches 150 miles (241 km) north to south and extends to a width of about 200 miles (322 km) along the shore of the Gulf of Guinea.

The **Zambezi River** of south-central Africa also meets the ocean in a delta. The Zambezi flows 2,200 miles (3,540 km) from its source near the Zambia-Angola border in the west to the Indian Ocean in the east, where it fans out in a delta that is 37 miles (60 km) wide. The Zambezi's course to the sea is interrupted in many places by waterfalls. At Victoria Falls, on the border of Zambia and Zimbabwe, the Zambezi plummets a sheer 355 feet (108 m), about twice the drop of Horseshoe Falls on the Niagara River between Canada and the United States. The water at Victoria Falls flows at 35,400 cubic feet (1,002 cubic m) per second.

Unlike the Niger, the Zambezi, and most other African rivers, the Congo River reaches the sea through a deep **estuary** (EHS•chuh•WEHR•ee), or passage where freshwater from a river meets

### Leading Diamond-Producing Countries



Source: Minerals Yearbook, 1999

### Geography Skills for Life

- Interpreting Graphs** Which African country produces the most diamonds?
- Applying Geography Skills** How does the diamond production in Botswana compare with diamond production in Australia?

seawater. The Congo's estuary is 6 miles (10 km) wide and is easily navigated by ocean vessels, making it an important waterway. The 2,900 miles (4,667 km) of the Congo form the largest network of navigable waterways on the continent. Some parts of the river, however, such as rapids and waterfalls, present serious obstacles to traffic. The river plunges up to almost 900 feet (274 m) in numerous cataracts not far from where it meets the Atlantic Ocean. The cataracts are a major barrier to travel from the estuary upriver.

### History

#### Daunting Physical Barriers

Although North Africans enjoyed relatively easy access to Europe and Southwest Asia across the Mediterranean and Arabian Seas, the Sahara prevented most land travel to and from central and southern Africa. The daunting physical geography



along the West African coast made travel inland by river very difficult for European traders, who began arriving in the late 1400s. Sand and silt deposits made navigation through the deltas treacherous. At certain times of the year, those who tried to sail inland often encountered shallows, sandbars, and even dry riverbeds. Farther upstream, rapids and waterfalls made travel upriver almost impossible. As a result, between the late 1400s and the late 1700s, most Europeans conducted trade with Africans from offshore islands or coastal forts, and regional African leaders maintained control of goods and trade routes in the interior of the continent.

## Natural Resources

Mineral resources are abundant throughout Africa south of the Sahara. Angola, Nigeria, Gabon, and Congo have plentiful oil reserves. Deposits of various metals, including chromium, cobalt, copper, iron ore, manganese, and zinc, are scattered across the region. South Africa supplies about half the world's gold. Zimbabwe, the Democratic Republic of the Congo, Tanzania, and Ghana are additional sources of this precious metal. Uranium, usually found with gold, is abundant in South Africa as well as in Niger, Gabon, the Democratic Republic of the Congo, and Namibia. South Africa, Botswana, and the

Congo River basin hold major diamond deposits. Diamonds also are mined in Angola, the Democratic Republic of the Congo, and Sierra Leone.

Water is an abundant resource in parts of Africa south of the Sahara, and it has tremendous potential for agricultural and industrial uses. Areas in the west of the region and near the Equator receive abundant rainfall. Controlling water for practical uses, such as irrigation and hydroelectric power, is difficult because rainfall often is irregular and unpredictable. Because of these physical challenges, combined with a lack of financial support, Africa has a great deal of unused hydroelectric power potential. The Congo River, for instance, has more potential hydroelectric power than all the lakes and rivers in the United States combined, but this resource has remained underdeveloped. Despite these challenges, some development has occurred, however. For example, most of the electricity generated in Kenya, Tanzania, Zambia, Ghana, and many other countries comes from hydroelectric power.

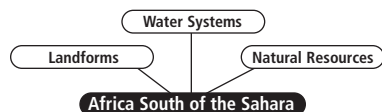
Solar power is another renewable energy source that has been harnessed in the region. In Kenya, rural electrification programs resulted in the installation of more than 20,000 small-scale solar power systems from 1986 to 1996. In the next section, you will read about the climate and vegetation of this vast region and their role in the development of Africa south of the Sahara.

## TX TAKS Practice

### SECTION 1 ASSESSMENT

#### Checking for Understanding

- 1. Define** escarpment, cataract, rift valley, fault, delta, estuary.
- 2. Main Ideas** Create a web like the one below to record and organize information about the region's physical geography.



#### Critical Thinking

- 3. Identifying Cause and Effect** Physical features such as the Sahara to the north and oceans to the east and west isolated Africa south of the Sahara from other regions. What effects did this isolation have?
- 4. Making Inferences** Considering the region's physical geography, what advancement in transportation do you think has contributed the most to improved travel in Africa?

#### Analyzing Maps

- 5. Place** Study the map on page 501. What do most of the countries with elevations of less than 1,000 feet (300 m) have in common?

#### Applying Geography

- 6. Identifying Cause and Effect** As a geographer from Kenya, write a paper on the geological process that caused the formation of the Great Rift Valley to deliver to the National Council for Geographic Education.

## Guide to Reading

### Consider What You Know

The continent of Africa straddles the Equator. How do you think this location affects climate and vegetation in Africa south of the Sahara?

### Read to Find Out

- What geographic factors affect climate in Africa?
- What kinds of climate and vegetation are found in Africa south of the Sahara?

### Terms to Know

- leach
- harmattan
- savanna

### Places to Locate

- Serengeti Plain
- Sahel
- Namib Desert
- Kalahari Desert

# Climate and Vegetation

 NATIONAL GEOGRAPHIC

## A Geographic View

### Desert Delta

*The Kalahari spread out below us. . . Thunderheads spread cobras' hoods on the horizon, and the air was heavy with the musk of rain-wet earth somewhere up the breeze. There would be lightning that night, flashing on the burnished hills, then wind and finally, perhaps, the water that the whole land craved like a kind of forgiveness, like a blessing long withheld.*

—Douglas B. Lee, “Okavango Delta: Old Africa’s Last Refuge,” *National Geographic*, December 1990



Kalahari sand dune, South Africa

“Pula”—in Botswana’s Okavango Delta, this word, meaning “rain,” is also used as a greeting. Rain is so important to the area, in fact, that *pula* is also the word for the country’s currency and the word for blood, or life. In many places in Africa south of the Sahara, water is such a precious resource that rain and life are considered one and the same. In this section you will discover how rain helps determine climate, and thus vegetation, in every part of the region—its deserts, steppes, savannas, and tropical forests.

## Tropical Climate

In addition to rainfall, other factors—ocean currents, prevailing wind patterns, elevation, and latitude—cause great variations in climate and vegetation throughout Africa south of the Sahara. However, as the map on page 506 shows, much of the region lies in the Tropics and has tropical climate and vegetation areas.

## Tropical Rain Forest

Tropical rain forest climate, located near the Equator, is the wettest climate region in Africa. Warm temperatures prevail in this zone. More than 60 inches (150 cm) of rainfall per year soak the dense forests. Rainfall amounts vary seasonally, but the tropical rain forests do not experience a truly dry season. Daily, rain falls on an amazing number and variety of life forms.

Shrubs, ferns, and mosses grow together at the lowest level of the rain forest, which rises 6 to 10 feet (2 to 3 m). A layer of trees and palms reaching as high as 60 feet (18 m) tops this undergrowth.

Arching over all is a canopy of leafy trees with a maximum height of 150 feet (46 m). Orchids, ferns, and mosses grow among the branches of the canopy, and woody vines link the trees in a tangle.

### Economics

## Crops and Cutting at a Cost

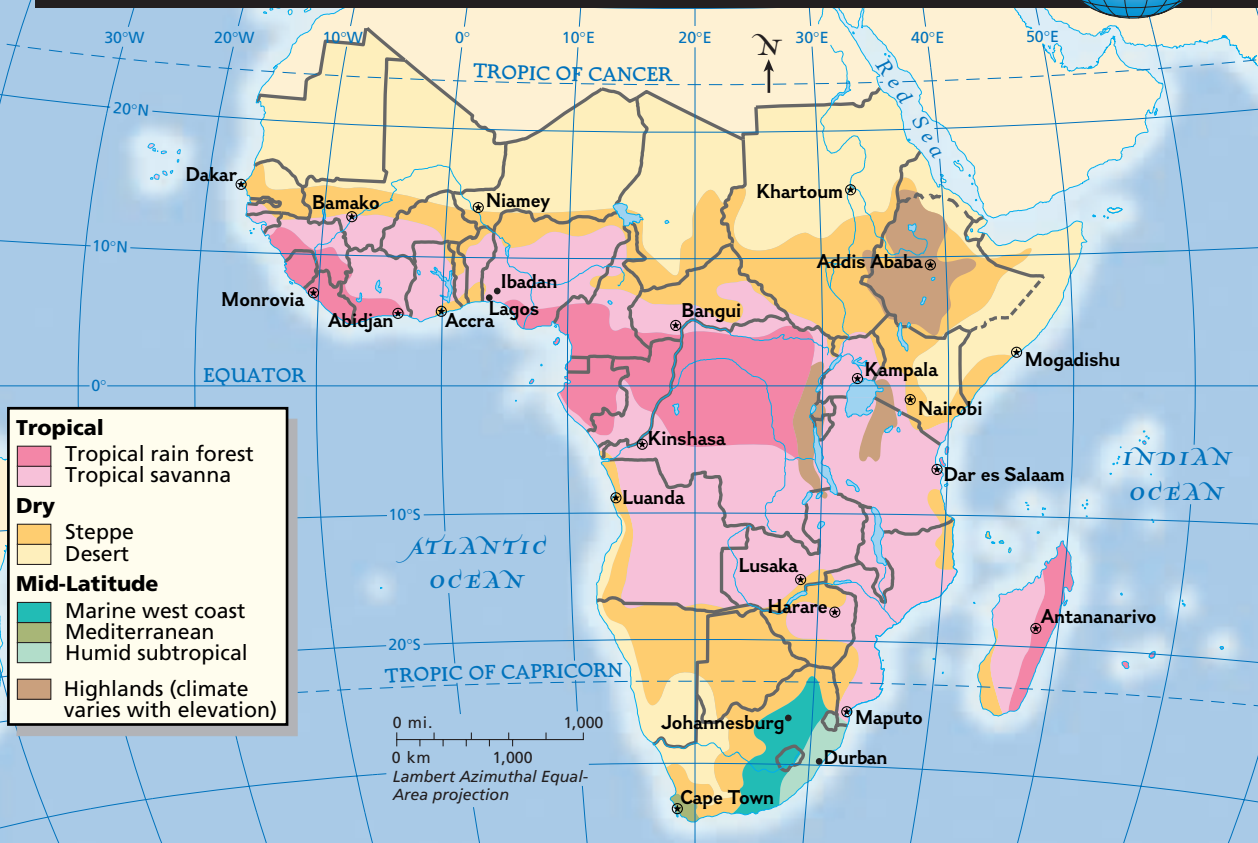
Although heavy rains in the tropical rain forest **leach**, or dissolve and carry away, nutrients from the soil, various crops are still grown in this zone. Bananas, pineapples, cocoa, tea, coffee, palms for oil, rubber, and cotton are grown as cash crops on large plantations. As farmers clear more land,

NATIONAL GEOGRAPHIC

## MAP STUDY



### Africa South of the Sahara: Climate Regions



### Geography Skills for Life

1. **Interpreting Maps** Where are moderate climate regions in Africa south of the Sahara located?

2. **Applying Geography Skills** Describe the sequence of climate regions as one moves north and south of the Equator in Africa.

Find NGS online map resources @ [www.nationalgeographic.com/maps](http://www.nationalgeographic.com/maps)

agriculture seriously threatens the rain forests. In addition, commercial loggers diminish the rain forest by clear-cutting tropical timber. The deforestation of Africa's tropical rain forests concerns people worldwide, who fear that if the clear-cutting continues the rain forests may disappear. In Chapter 22 you will read about steps that governments, groups, and individuals are taking to protect Africa's rain forest environments.

## Savanna

Tropical grassland with scattered trees—known as **savanna**—covers almost half of the continent of

Africa. Rainfall is seasonal in this climate zone, with alternating wet and dry seasons. In the wettest areas, which are closest to the Equator, six months of almost daily rain is followed by a six-month dry season. Average annual rainfall in the savanna is about 35 to 45 inches (90 to 115 cm).

Dueling winds affect the savanna climate of western Africa. Hot, dry air streams in from the Sahara on a northeast trade wind known as a **harmattan**. Although dusty, a harmattan is welcome in the summer because it dries up moisture left by heavy summer rains. Around the same time of year, cool, humid air blows in from the southwest.



Tornadoes sometimes form when a harmattan and the southwest winds collide.

Trees are the main feature of the landscape in some parts of the savanna, while tall grasses cover other areas. Animals of many species graze in this zone. On the **Serengeti Plain**, one of the world's largest savanna plains, more than 1 million gnu, 60,000 zebras, and 150,000 gazelles roam, as well as hyenas, lions, giraffes, cheetahs, and other animals. Many of these animals live in the protected Serengeti National Park in Tanzania.

## Dry Climates

Away from the Equator, tropical climates fade into semiarid steppe areas, which finally give way to the driest climate region of all—desert. Declining rainfall and growing populations have contributed to the expansion of the region's deserts.

## Steppe

Separating the savanna from the deserts of Africa is semiarid steppe. In the south, steppe land extends to the southern tip of the continent.

The northern steppe is called the **Sahel**—literally “shore” or “edge” in Arabic. This band of dry land, which extends from Senegal to Sudan, represents the southern “coast” of the Sahara. The Sahel has natural pastures of low-growing grasses, shrubs, and acacia trees. On average, 4 to 8 inches (10 to 20 cm) of rain falls annually, but this rainfall is concentrated in June, July, and August. The remaining months are generally very dry.

### Economics

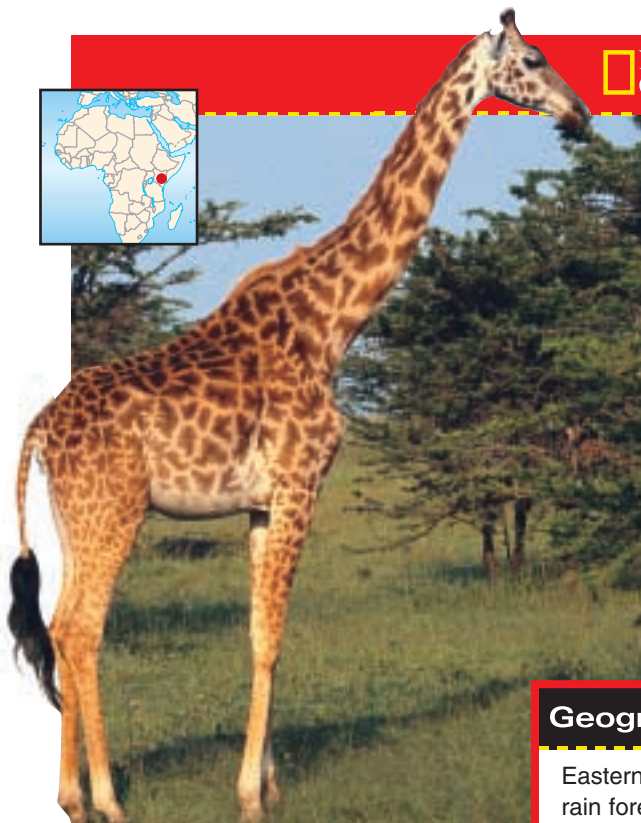
## Desertification

Over the past 50 years, the Sahel has undergone much desertification—a process by which productive land turns into desert following the destruction



**Student Web Activity** Visit the **Glencoe World Geography** Web site at [tx.geography.glencoe.com](http://tx.geography.glencoe.com) and click on Student Web Activities—Chapter 20 for an activity on touring the physical features in Tanzania.

**CLICK HERE**



NATIONAL GEOGRAPHIC

World Explorer



Geography Skills for Life

**Tropical Climates**

Eastern Africa includes both tropical savanna (left) and tropical rain forest (right) climates.

**Place** What animals live on the Serengeti Plain?



▲ *Desertification in the Sahel of West Africa*

of vegetation. Some scientists claim that the Sahel’s desertification is caused mainly by climate change that brings long periods of extreme dryness and water shortages. Lands managed well during drought periods can usually recover once rains return. Other scientists, however, believe that human and animal activities also contribute to desertification. People strip trees for firewood and clear too much land for

farming, while livestock overgraze the short grasses. As a result, the land is depleted and topsoil is further eroded, reducing both the land’s productivity and its ability to recover from drought.

## Desert

Isolated parts of southern Africa swelter in a desert climate. In the east, hot, dry weather prevails in much of Kenya and Somalia. Along the Atlantic coast of Namibia, rocks, dunes, and scattered desert plants cover the **Namib Desert**. Joining the Namib, the **Kalahari Desert** occupies eastern Namibia, most of Botswana, and part of South Africa. A sand-swept expanse with few other features, most of the Kalahari

is true desert, but parts of it do support some animals and a variety of plants, including grass and trees. In general, little rain falls in the desert, and average monthly temperatures are extremely high. Daily temperatures in the Kalahari vary greatly, however, ranging from 120°F (49°C) during the day to 50°F (10°C) at night.

## Moderate Climates

Although less extensive than the main climate zones, moderate climate zones also exist in Africa south of the Sahara. As the map on page 506 shows, coastal areas of South Africa and highlands regions in East Africa enjoy moderate climates with comfortable temperatures and enough rainfall for farming. In the highlands, temperatures are somewhat lower, snow is not uncommon at high elevations, and vegetation abounds. The highlands areas can seem almost lush, as Curt Stager observed on his journey through East Africa:

“The Ethiopian Highlands are far cooler and [more moist] than the surrounding lowlands. Although plagued in recent years by drought, this area is, in normal times, an agricultural island in a desert sea.”

Curt Stager, “Africa’s Great Rift,” *National Geographic*, May 1990

## TX TAKS Practice

### SECTION 2 ASSESSMENT

#### Checking for Understanding

- 1. Define** leach, savanna, harmattan.
- 2. Main Ideas** Use a table like the one below to fill in characteristics of Africa south of the Sahara. Then write a short description of one of the region’s climate zones.

Climate Zone	Climate	Vegetation

#### Critical Thinking

- 3. Making Predictions** Do you think desertification will continue in Africa south of the Sahara? Explain your answer.
- 4. Identifying Cause and Effect** In what ways are people affecting Africa’s tropical rain forests?
- 5. Making Generalizations** How does physical geography affect the climate and vegetation in this region?

#### Analyzing Maps

- 6. Region** Study the maps on pages 506 and 507. Which climate regions lie on the Equator? What kind of vegetation thrives there?

#### Applying Geography

- 7. Rainfall’s Impact** As a geographer studying rainfall in Africa south of the Sahara, write a report explaining how precipitation defines climate and vegetation there.

## Learning the Skill

Each of the 24 time zones represents 15° longitude, or the distance that the earth rotates in one hour. The base time zone, called Greenwich Mean Time (GMT) or Universal Time, is set at the Prime Meridian (0°). As one travels west from Greenwich, the time becomes earlier; as one travels east, the time becomes later. The international date line generally follows the 180° meridian. Traveling west across this imaginary line, you add a day. Traveling east, you subtract a day.

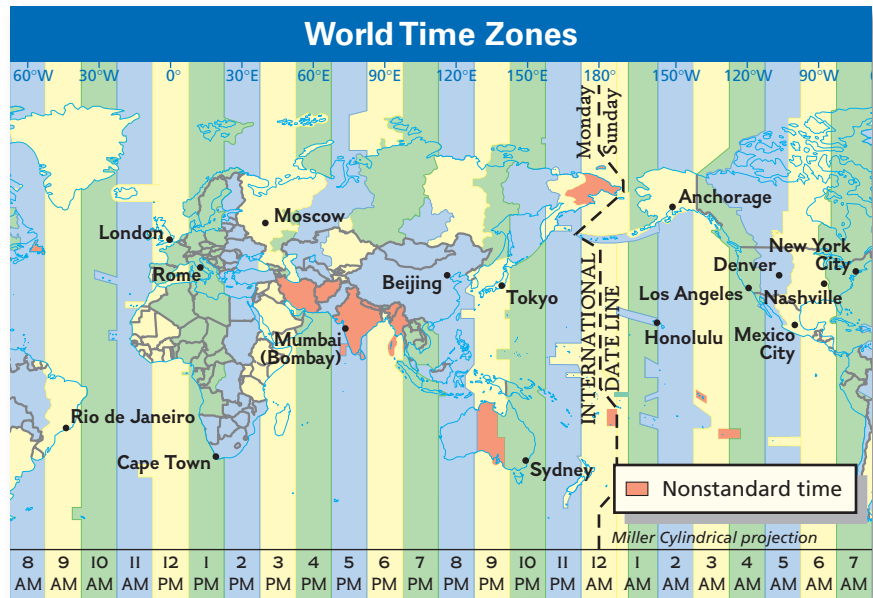
The imaginary lines that divide time zones sometimes curve or form angles. The lines are drawn to allow for geographic or political needs. For example, certain lines curve around Pacific island groups so that island countries that cover relatively small areas will not have multiple time zones.

To determine the time and day of the week in different time zones, follow these steps:

- Locate on the map a place for which you already know the time and day of the week.
- Locate the place for which you wish to know the time and day of the week.
- Count the time zones between the two places.
- Calculate the time by either adding or subtracting an hour for each time zone, depending on whether you are moving east or west.

# Understanding Time Zones

**A**s the earth rotates on its axis, half of the planet experiences day and the other half experiences night. By international agreement there are 24 time zones around the world.



- If you have crossed the International Date Line, identify the day.

5. Notice that some time zones have crooked boundaries. Why do you think that is?

## Practicing the Skill

Study the map and answer the questions.

1. How many time zones does continental Africa have?
2. Does Africa have more, fewer, or the same number of time zones as the United States?
3. If it is 4:00 P.M. Saturday in Cape Town, South Africa, what time and what day is it in Rio de Janeiro, Brazil?
4. If it is 10:00 A.M. Tuesday in Sydney, Australia, what time and what day is it in Honolulu, Hawaii?

## Applying the Skill

Use a reference book or Internet sources to find a more detailed map of Africa's time zones. Notice how the lines are drawn in relation to cities, political divisions, or physical features. Then make a list of locations where adjusted lines occur. Write the reasons you think the adjustments were made.



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



## SECTION 1 The Land (pp. 499–504)

### Terms to Know

- escarpment
- cataract
- rift valley
- fault
- delta
- estuary

### Key Points

- Africa south of the Sahara is a series of step-like plateaus, rising in a few places to mountains and slashed in the east by a rift valley.
- High elevations and narrow coastal plains characterized by escarpments have made traveling to Africa's interior very difficult.
- The region's water systems include numerous long, large, or deep lakes; spectacular waterfalls; and great rivers that drain expansive basins.
- Minerals and water are the region's most abundant natural resources.

### Organizing Your Notes

Use a table like the one below to help you organize important details about the physical features of Africa south of the Sahara.

Physical Feature	Location

## SECTION 2 Climate and Vegetation (pp. 505–509)

### Terms to Know

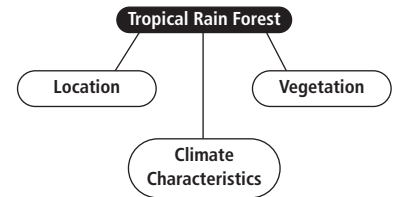
- leach
- savanna
- harmattan

### Key Points

- Rainfall, tropical latitudes, nearness to the Equator, ocean air masses, and elevation are the main factors influencing climate variations in Africa south of the Sahara.
- The region can be divided into four main climate zones: tropical rain forest, savanna, steppe, and desert.
- Moderate climates such as humid subtropical and marine west coast are also found in Africa south of the Sahara.

### Organizing Your Notes

Use a graphic organizer like the one below to organize your notes about each of the climate zones described in this section.



◀ African wild dogs hunt in the Okavango Delta, Botswana



## Reviewing Key Terms

On a sheet of paper, write the term that matches each definition. Refer to the Terms to Know in the Summary & Study Guide on page 511.

1. a crack in the earth's surface created by shifting of the earth's tectonic plates
2. tropical grassland with scattered trees
3. a towering waterfall
4. a triangular section of land formed by sand and silt carried downriver to a river's mouth
5. a steep, often jagged slope or cliff
6. a northeast trade wind crossing the Sahara
7. to dissolve and carry away
8. a passage where freshwater meets seawater
9. a long valley between faults in the earth, with volcanic mountains and deep lakes

## Reviewing Facts

### SECTION 1

1. Where are the main highlands areas and mountains in Africa south of the Sahara?
2. What three great river basins are located in Africa south of the Sahara?
3. What natural resources are especially plentiful in Africa south of the Sahara? Describe the locations of these resources.

### SECTION 2

4. Describe vegetation changes in the Sahel and the causes that contribute to these changes.
5. What kind of vegetation grows in the savannas of this region?
6. What is the wettest climate zone in Africa south of the Sahara, and what types of vegetation grow there?

## Critical Thinking

1. **Drawing Conclusions** What resources make Africa important to the world economy? Why?
2. **Making Generalizations** What general observations can you make about the areas of the region that have moderate climates?
3. **Drawing Conclusions** Create a Venn diagram to compare causes of rain forest deforestation and of desertification in the Sahel. Then propose steps to solve the problem.



## Locating Places

### Africa South of the Sahara: Physical Geography

Match the letters on the map with the physical features of Africa south of the Sahara. Write your answers on a sheet of paper.

- |                    |                      |                    |
|--------------------|----------------------|--------------------|
| 1. Lake Chad       | 5. Great Rift Valley | 9. Lake Tanganyika |
| 2. Kilimanjaro     | 6. Okavango Delta    | 10. Congo River    |
| 3. Kalahari Desert | 7. Lake Victoria     | 11. Niger River    |
| 4. Lake Malawi     | 8. Zambezi River     | 12. Namib Desert   |



