



Climate and Vegetation

Main Ideas

- Africa contains dry and hot deserts, warm tropics, and permanently snow-capped mountains.
- Africa's vegetation includes thick rain forests, tall grasslands, and desert areas.

Places & Terms

Sahara	Serengeti Plain
aquifer	canopy
oasis	

CONNECT TO THE ISSUES

ECONOMIC DEVELOPMENT

Africa's tropical rain forests are being cut down for farmland and valuable timber.

A HUMAN PERSPECTIVE In 1352, 48-year-old Ibn Battuta, a great traveler from Morocco, set out for the empire of Mali in West Africa. His most challenging obstacle was the Sahara, a desert nearly the same size as the continental United States. Battuta and his caravan set out in February. They traveled only in early morning and early evening to avoid the midday heat. Even so, they still battled temperatures of nearly 100 degrees during the day and freezing temperatures at night. Reaching Mali around April, Battuta covered more than 1,000 miles, all on foot. The Sahara today remains just as hazardous—fewer than 2 million of Africa's approximately 800 million people live in it.

A Warm Continent

You can see from the map on page 421 that Africa lies almost entirely between the tropic of Cancer and the tropic of Capricorn. This location gives most of Africa warm, tropical temperatures.

THE DESERTS The **Sahara** is the largest desert in the world. Sahara actually means “desert” in Arabic. It stretches about 3,000 miles across the continent, from the Atlantic Ocean to the Red Sea, and also runs 1,200 miles from north to south. Temperatures can rise as high as 136.4°F in the summer, hot enough to fry an egg on the sand. But temperatures can also fall below freezing at night in winter.

Only about 20 percent of the Sahara consists of sand. Towering mountains, rock formations, and gravelly plains make up the rest. For instance, the Tibesti Mountains, located mostly in northwestern Chad, rise to heights of more than 11,000 feet. Other African deserts include the Kalahari and the Namib.

Travel in the Sahara is risky because of the extreme conditions. Many travelers rely on the camel as desert transportation. A camel can go for

PLACE Rolling sand dunes are only a small part of the Sahara's varied landscape.

How might an expanding desert affect the lives of the people living near it?

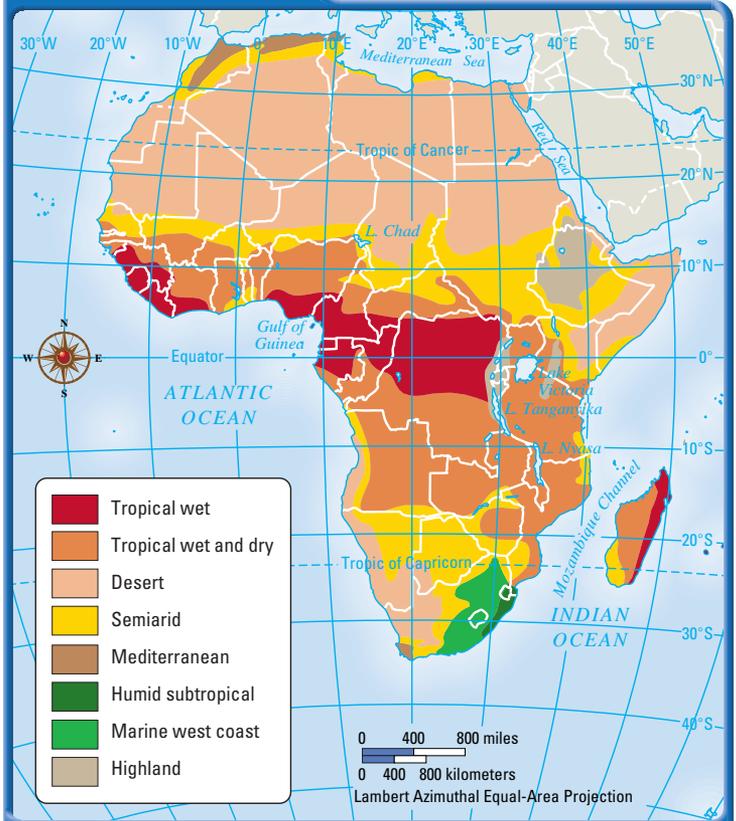


up to 17 days without water. In addition, wind-blown sand has little effect on a camel. It closes its nostrils and just keeps walking.

Ironically, as much as 6,000 feet under this hottest and driest of places lie huge stores of underground water called **aquifers**. In some places, this water has come to the surface. Such a place is called an **oasis**. It supports vegetation and wildlife and is a critical resource for people living in the desert.

THE TROPICS Africa has a large tropical area—the largest of any continent. In fact, nearly 90 percent of the continent lies within the tropics of Cancer and Capricorn, as you can see on the map to the right. Temperatures run high most of the year. The hottest places are in the parts of the Sahara that lie in the nation of Somalia. July temperatures average between 110°F and 115°F almost every day. Differences in temperature between winter and summer in the Tropics are barely noticeable. Differences in temperature between night and day actually tend to be greater than any difference between seasons. A saying in Africa says that nighttime is the “winter” of the tropics. **A**

Climates of Africa



SKILLBUILDER: Interpreting Maps

- 1 REGION** What climate zones are found only in Southern Africa?
- 2 PLACE** What is Africa's most dominant climate zone?



Using the Atlas

A Which climate regions of Africa do the tropics of Cancer and Capricorn pass through?

Sunshine and Rainfall

Rainfall in Africa is often a matter of extremes. Some parts get too much rain, while other parts receive too little. The amount of rainfall can also vary greatly from year to year as well as season to season. These variations have had a tremendous impact on East Africa, which endured several droughts in the 1980s and 1990s.

RAINFALL PATTERNS The rain forest in Central Africa receives the most precipitation, as rain falls throughout the year. Most of the rest of Africa, however, has one or two rainy seasons. Africa's tropical savanna stretches through the middle of the continent. It covers nearly half the total surface area of Africa. Rainy seasons in this area can last up to six months. The closer an area is to the equator, the longer the rainy season. The closer an area is to the desert, the longer the dry season.

Africa's west coast also receives a great deal of rain. The region around Monrovia, Liberia, experiences an average annual rainfall of more than 120 inches. In contrast, many parts of Africa barely get 20 inches of rain over the course of a year. In the Sahara and other deserts, rain may not

fall for years. Children living in those areas may not see rain until they are five or six years old!

AFRICA'S MODERATE AREAS A Mediterranean climate exists on the northern and southern tips of the continent. Clear, blue skies in these places are normal. Rain falls usually only in the winter—December and January in North Africa and June and July in Southern Africa. Summer temperatures in Johannesburg, South Africa, average around 68°F.

A Grassy Continent

Africa's vegetation—like its climate—is almost mirrored north and south of the equator. Africa's vegetation consists of grasslands, rain forests, and a wide variety of other plant life.

TROPICAL GRASSLAND Tropical grassland covers most of the continent. One example of this grassland is the **Serengeti Plain** in northern Tanzania. Its dry climate and hard soil prevent the growth of trees and many crops, but these conditions are perfect for growing grass. Serengeti National Park, located within the Serengeti Plain, contains some of the best grasslands in the world. Some of these grasses can grow taller than the average person. The abundance of grass makes Serengeti National Park an ideal place for grazing animals. Huge herds of wildebeests, gazelles, and zebras roam there. It is the place where the largest numbers of land mammals still make annual migrations.

BACKGROUND
Serengeti means "endless plains" in the Masai language.

PLACE These wildebeests live in Serengeti National Park, which was founded in 1951. **How might the park help conservation efforts in Africa?**



Africa's Extremes

An enormous tropical rain forest stretches across Central Africa.

RAIN FOREST The major rain forests of Africa sit on the equator in the area of the Congo Basin. One square acre of rain forest can contain almost 100 different kinds of trees. It may also be home to hundreds of species of birds. The massive number of plants, leaves, and trees block out much of the sunlight that would otherwise hit the floor of the rain forest. Beneath this umbrella of vegetation, the air is hot and filled with moisture. As a result, plants and other vegetation quickly decompose, or decay. For example, a fallen leaf in Europe decomposes in about a year. A leaf on the jungle floor in Africa decomposes in about six weeks. **B**

Most animals in a rain forest live in the canopy. The **canopy** refers to the uppermost layer of branches, about



Seeing Patterns

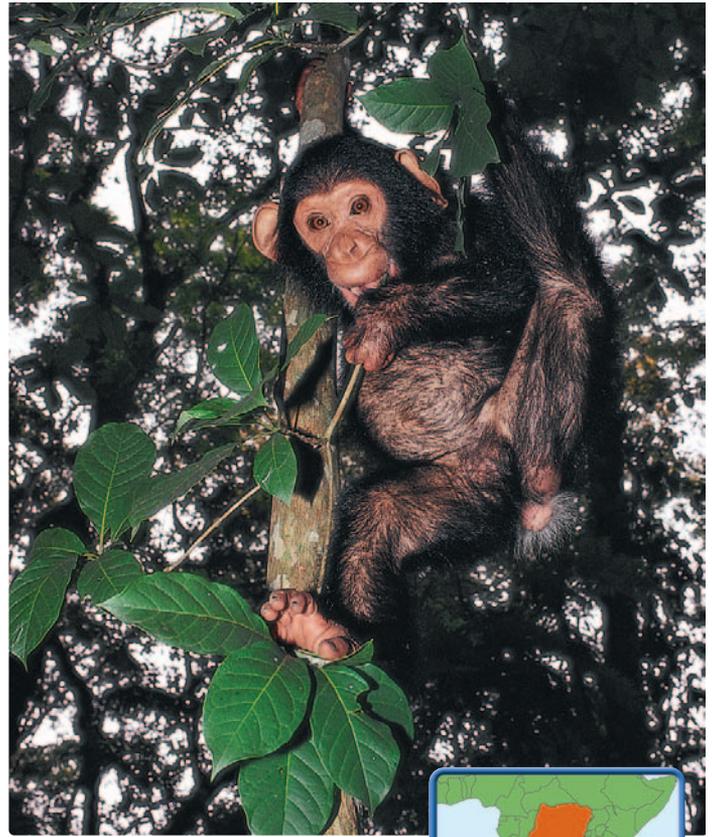
B How do rain forests maintain such a high level of moisture?

150 feet above the ground. Birds, monkeys, and flying foxes move from tree to tree and enjoy the bounty of the rain forest. A large number of snakes live in these rain forests, too. The Gaboon viper, the largest African viper, can weigh as much as 18 pounds and have fangs more than two inches long. Another snake, the black-necked cobra, can shoot its venom more than eight feet through the air.

However, farmers using slash-and-burn agricultural methods are endangering the existence of the rain forest. As you read in Chapter 9, slash-and-burn farming is a method in which people clear fields by cutting and burning trees and other vegetation, the ashes of which fertilize the soil. After farmers have exhausted the soil, they burn another patch of forest.

Slash-and-burn farming is responsible for the nearly complete destruction of Madagascar's rain forest. Experts estimate that over half of Africa's original rain forest has been destroyed.

VARIETIES OF PLANTLIFE All of Africa's regions contain a variety of vegetation. North Africa contains sizable oak and pine forests in the upper reaches of the Atlas Mountains. The mangrove tree of West Africa sprouts up along river banks in swamps and river deltas. Mangrove tree roots are breeding grounds for fish. They also help to build up dry land by holding silt. In the next section, you will read about different ways that people in Africa have interacted with their environment.



MOVEMENT

Animals, such as this chimpanzee, move about the Ituri rain forest in the Democratic Republic of the Congo.



Assessment

1 Places & Terms

Explain the meaning of each of the following terms.

- Sahara
- aquifer
- oasis
- Serengeti Plain
- canopy

2 Taking Notes

PLACE Review the notes you took for this section.

<i>Climate and Vegetation</i>	
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- What are the different climates found in Africa?
- How does climate affect the vegetation of Africa?

3 Main Ideas

- What is the largest climatic feature in Africa?
- Why does most of Africa have high temperatures?
- What are the different kinds of vegetation growing in Africa?

4 Geographic Thinking

Making Comparisons What are the similarities between the climates of Africa north and south of the equator?

Think about:

- the Sahara
- where the equator cuts across Africa



RESEARCH LINKS
CLASSZONE.COM



MAKING COMPARISONS Choose a place in Africa and a place in the United States at about the same latitude. Use encyclopedias or the Internet to compare the climate and vegetation of the two places. Create a **chart** comparing the two locations.