

# Lesson

# 5

# The Expanding Desert

## WHAT YOU WILL LEARN

To explain the causes of desertification and describe solutions to the problem

## READING STRATEGY

Create a diagram like the one below. List the factors that have led to desertification, or loss of vegetation, in the Sahel.



## TERMS TO KNOW

Sahel, desertification, arable land, drought, cash crop, fallow, arid, famine

What do you think of when you hear the word *desert*? What images come to your mind? Where are some of the world's deserts located? Did you know that deserts can grow and shrink?

## What Is Desertification?

The world's deserts were formed over a long period of time. Deserts are often separated from surrounding areas by landforms such as mountains. In some parts of the world, however, desert borders are not clear. Often, there is a transition zone, where a desert region blends into a more humid, or wet environment. The land that borders the desert generally includes vegetation such as sparse trees, shrubs, and grasses.

In western Africa, a region known as the **Sahel** is a transition zone between the Sahara to the north and the wetter areas to the south. The word *Sahel* comes from the Arabic word for "border." Vegetation such as grasses and shrubs grow in the Sahel. The region generally receives about 4 to 8 inches (10 to 20 cm) of rain, most of it between June and September. Many areas of the Sahel have been used for farming and for raising livestock.

Over the past 50 years, the Sahel has suffered from soil erosion and **desertification**—a process by which productive land turns into desert following the destruction of vegetation. When this happens, the soil cannot hold moisture and the desert encroaches upon it. As a result, the amount of **arable land**, or land suitable for growing crops, in the region has diminished.



This area of the Namib Desert in southern Africa includes a transition zone of sparse trees, shrubs, and grasses.

## What Causes Desertification?

Desertification usually occurs in places that experience **drought**, or a long period of extreme dryness and water shortages. However, drought alone does not cause desertification. The major causes have more to do with the way people have used the land, such as in the Sahel.

The Sahel experienced a major drought that lasted from the late 1960s until the early 1980s. People there had traditionally made a living from farming and herding. Nomadic herders moved from place to place, finding food and water for their animals. Then they began using technology to drill deep wells, which provided a steady source of water. Many herders gave up a nomadic way of life and settled near the sources of water. They also raised more livestock. As a result, the land became overgrazed.

At the same time, the population of the Sahel was growing. More people turned to farming and the most fertile lands in the region were used to grow **cash crops**, such as cotton. Cash crops are grown to be sold or traded rather than used by the farmers themselves. To grow more crops, farmers in the Sahel began to change their farming practices. Instead of letting fields remain **fallow**, or idle, for 15 to 20 years to regain their fertility, the farmers began to rework the land within 1 to 5 years. Doing this did not give the land enough time to recover its nutrients. With the continuing drought, the land became **arid**, or dry, and the desert moved southward. Overgrazing, overfarming, and the continuous drought destroyed the Sahel's farmlands and grasslands.

## What Problems Does Desertification Cause?

As the desert moved southward into the Sahel, people and their livestock moved to avoid it. As they moved southward, they continued to graze and farm the land, causing it to lose its richness and become arid. Droughts, which have always occurred in the semiarid Sahel, have recently become severe there and in other parts of Africa south of the Sahara. For example, in the early

1990s, drought in the Horn of Africa, which includes Eritrea, Somalia, Ethiopia, and Djibouti, caused widespread famine. **Famine** is an extreme lack of food. Since 1998 drought has killed crops and livestock across East Africa, threatening the lives of hundreds of thousands of people.

Desertification has caused other problems in the region. Unable to make a living by farming or herding, many people migrated to cities to work. This affected the region's economies. With fewer people farming, the countries in this region were not able to produce enough farm products to meet the needs of their people. Fewer farm products led to higher prices for these products.

The increased numbers of people migrating to cities also caused problems. Cities became overcrowded. They could not provide all the things that the increasing numbers of people needed to live.

Desertification is not just a problem for the Sahel. It is a worldwide problem. The United Nations estimates that desertification currently affects about 70 countries and will affect the lives of up to 900 million people.

## What Can Be Done?

Satellites have been used in the last 25 years to keep track of the spread of desertification throughout the world. They take images of a particular area over a period of several years. In this way they can track changes in the land due to desertification. Monitoring the land can help countries become aware of the problem and do something about it.

People and governments are working to protect their lands. For example, farmers in Ethiopia have terraced more than 250,000 acres (about 101,172 ha) of land and planted 42 million young trees to hold soil in place. They also built earthen dams to store rainwater. Other countries are finding ways to better use their water resources, such as tapping groundwater to irrigate arid lands. Research is being done on crop rotation to keep the soil fertile. People are learning which plants can best adapt to an arid environment. They are also learning how grazing lands and water resources can be developed without being overused.

## Using Your Skills

### A REVIEWING KEY TERMS

Match each term in Column A with its meaning in Column B.

#### Column A

- \_\_\_\_\_ 1. arable land
- \_\_\_\_\_ 2. desertification
- \_\_\_\_\_ 3. drought
- \_\_\_\_\_ 4. cash crops
- \_\_\_\_\_ 5. famine

#### Column B

- a. an extreme lack of food
- b. crops that are grown to be sold or traded
- c. the process in which land that once had vegetation has turned into desert
- d. land suitable for growing crops
- e. a period of extreme dryness

### B RECALLING FACTS

Use the reading to answer these questions.

1. Describe the general climate conditions of the Sahel.

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2. What three factors contributed to desertification in the Sahel?

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3. Describe the two problems caused by desertification in the Sahel.

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4. What is being done to help prevent desertification?

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## **G PRACTICING MAP SKILLS**

Use **Map 6-5: World Desertification** below to answer these questions.

1. What does the map show?

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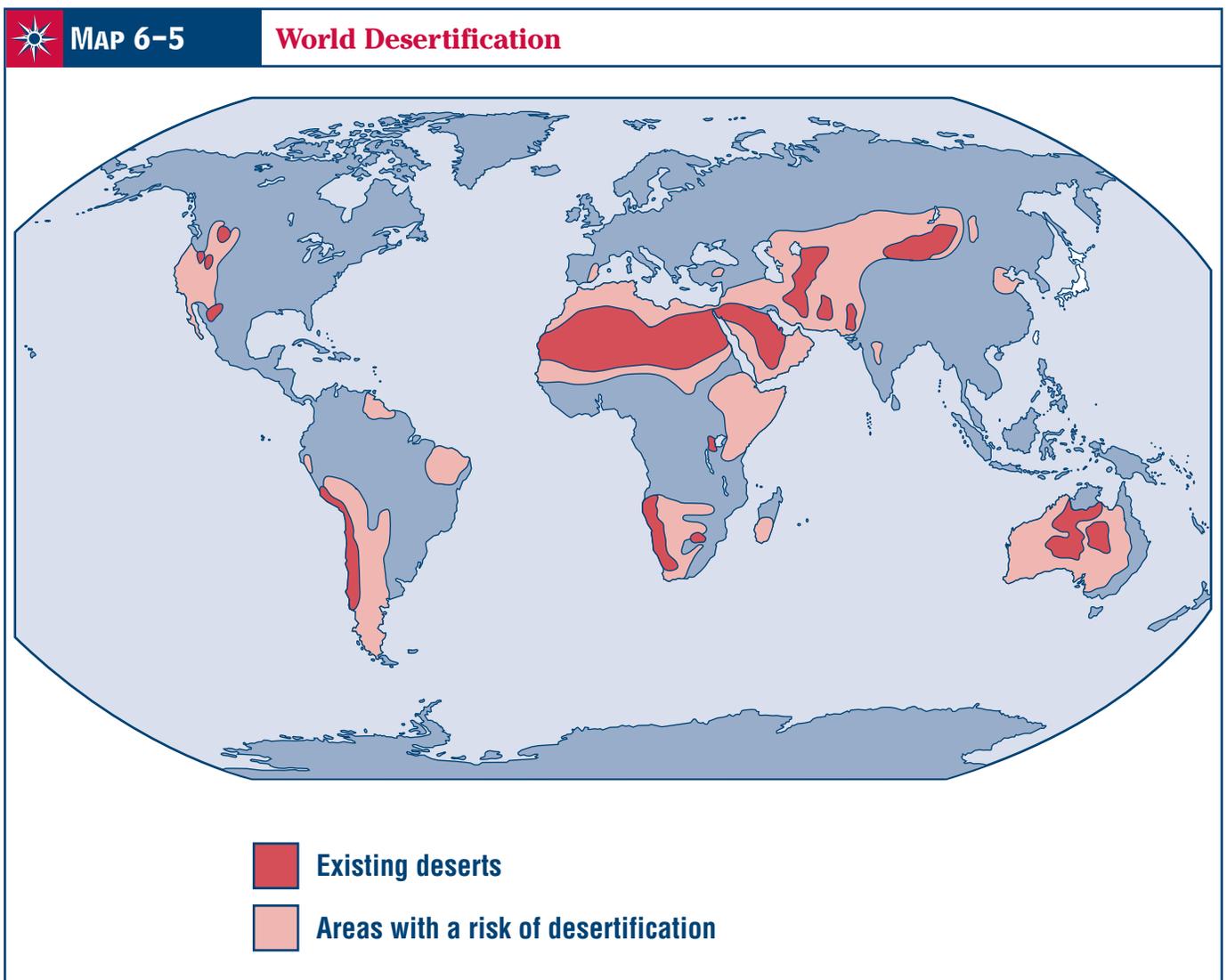
2. Which continents have areas that are at risk for desertification?

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3. What part of the United States is at risk for desertification?

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Source: *Atlas of World History*. New York: Oxford University Press, Inc.