

Lesson

8

The Rain Forest—An Ecosystem In Trouble

WHAT YOU WILL LEARN

To describe the benefits produced by the world's rain forests

READING STRATEGY

In a chart like the one below, identify arguments for and against the cutting down of the rain forests.

| CUTTING DOWN THE RAIN FORESTS | |
|-------------------------------|---------|
| FOR | AGAINST |
| | |

TERMS TO KNOW

deforestation, global warming

Imagine that you are walking through a dense forest of huge trees. The forest is so dense that you need a flashlight to see where you are going. As you look up into the trees, you see different kinds of animals—animals you have never seen anywhere else. Most likely you are walking through one of the world's rain forests.

What's In a Rain Forest?

A rain forest is made up of tall trees that grow year-round in places that have a tropical climate. (You read about the world's climates in Unit 3, Lesson 3.)

Tropical rain forests make up only about 7 percent of the earth's surface. However, more than half of the earth's plant and animal species live there. There are more varieties of amphibians, birds, and insects in rain forests than anywhere else in the world.



A rain forest in Guatamala displays a typical abundance and density of vegetation.

Why Are Rain Forests Important?

Rain forests are home to millions of people. Many groups of people have lived in the world's rain forests for thousands of years. It is estimated that as many as 1,000 different cultures may be living in the world's rain forests. Groups such as the Yanomami in South America and the Mbuti of central Africa make a living in the rain forests by hunting, fishing, and gathering forest products.

Rain forests also provide many benefits to people living outside of the rain forests. Wood is one of the most important rain

forest products. Teak, rosewood, and mahogany are used to make furniture around the world. **Figure 5-6** shows some of the other products that are made from rain forest plants. Other important rain forest resources include petroleum and natural gas. Deposits in Southeast Asia, central Africa, and South America attract foreign businesses.

Rain forests provide scientific value. Scientists believe they have discovered only a small percentage of the plants that grow in the rain forests. Many of these plants have been used to make medicines. For example, specialized medicines used to treat a rare form of leukemia were created from plants in Madagascar’s rain forest. **Figure 5-6** shows some other medicines made from rain forest plants. Scientists believe that the drugs already in use are just a fraction of the potential medicines rain forests may hold.

Rain forests help to regulate and maintain the environment. They absorb a large amount of rain. Much of the rain evaporates from the leaves of the trees and goes back into the atmosphere as water vapor. Eventually the vapor condenses and comes back to the earth as rain. The thick vegetation of the rain forests helps prevent soil erosion. The plants also absorb carbon dioxide from the atmosphere and give off oxygen. In fact, tropical rain

forests absorb more carbon dioxide than any other ecosystem on Earth. Scientists claim that this lessens the impact of global warming. Rain forests also help to control temperature by absorbing light and heat. By doing so, they help keep tropical climates from becoming too hot or too cool.

Rain forests also provide recreational value. They provide tourists with the opportunity to see beautiful vegetation and unique animals that cannot be found anywhere else on Earth.

Rain Forests In Trouble

Although the rain forests are home to unique cultures, plants, and animals, and provide many benefits, they are in danger. Thousands of square miles of rain forests are destroyed every year. This loss or destruction of trees is called **deforestation**. Experts believe that about 35 million acres (14 million hectares) of the world’s tropical forests are lost every year.

There are several causes of deforestation. Some tropical forests have been cut down for the valuable timber or to clear land for farming. Some governments have ordered the clearing of rain forests to provide space for their country’s growing population. Mining companies have cut down trees in search of petroleum or other minerals. Trees have

|  FIGURE 5-6 | | Products from Rain Forests | |
|---|------------------------|---|--|
| Ingredient | Source | Product | |
| Rubber | Rubber tree | Tires, toys, and industrial raw materials | |
| Rattan | Palm leaves | Wicker baskets, furniture | |
| Cacao beans | South American tree | Chocolate, cocoa, cocoa butter | |
| Kola nuts | Seed of a kola tree | Soft drinks | |
| Palm oils | Palm hearts | Cooking oil | |
| Sapayul oil | Sapote plant | Shampoo and conditioner | |
| Chicle | Sapodilla tree | Base of chewing gum | |
| Medicine | Source | Treatment | |
| Cinchona | Cinchona tree | Reduces high fevers | |
| Quinine | Bark of rubiaceae tree | Malaria | |
| Rosy periwinkle | Tropical forest plant | Hodgkin’s disease and other forms of cancer | |

also been cut down so that dams could be built to provide these areas with hydroelectric power.

Consequences of Deforestation

Deforestation has displaced many groups of people who live in the rain forests. It threatens to destroy many species of plants and animals. In addition, it can limit the many environmental benefits that rain forests provide. For example, destroying the rain forests contributes to an increase of carbon dioxide in the earth's atmosphere. Some scientists believe that the buildup of this gas can increase global temperatures. Known as **global warming**, this situation could lead to problems such as melting of the polar regions.

This, in turn, can lead to rising sea levels, and flooding of many of the world's coastal areas.

Saving the Rain Forests

In recent years, many conservation organizations throughout the world have been working with governments to save the rain forests. These organizations have made people aware of the importance of rain forests. They have set up protected areas, such as national parks, where rain forests are left undisturbed and intact. They have also worked with governments to set up ways of managing rain forests. By managing them properly, people can continue to benefit from what the rain forests have to offer while working to prevent their destruction.

Using Your Skills

A RECALLING FACTS

Use the reading and **Figure 5-6** to answer the questions.

1. Describe three reasons why rain forests are important.

2. Why are rain forests in danger?

3. Other than medicines, what kinds of products are made with ingredients from the rain forest?

4. Why are trees in the rain forest being cut down?

5. What are the consequences of cutting down the rain forest?

Unit **5** Review

Environment and Society

A RECALLING FACTS

Write *T* if the statement is true. Write *F* if the statement is false.

- _____ 1. Nature's most violent storms are tornadoes.
- _____ 2. Pollutants are harmful substances found in the environment.
- _____ 3. Many dangerous wastes are pumped down wells.
- _____ 4. Droughts occur suddenly and damage plants, animals, and humans.
- _____ 5. Tropical rain forests cover half the earth's surface.
- _____ 6. Most pollution is caused by human activities.
- _____ 7. Anything that burns a fossil fuel such as coal, oil, or natural gas adds to air pollution.
- _____ 8. Natural resources are naturally occurring things that are found on Earth.
- _____ 9. The greenhouse effect is a slow warming of the earth caused by burning fossil fuels.
- _____ 10. The change in climate due to time is called vertical zonation.
- _____ 11. The safest place to be in a tornado is in an underground shelter.
- _____ 12. People in developing countries tend to have small families.
- _____ 13. Lightning often strikes the tallest object.
- _____ 14. Hurricanes strike quickly and give people no time to get to a safer place.
- _____ 15. The use of technology to make our lives easier has increased levels of pollution.