

Two capuchin monkeys with black bodies and white faces and chests are perched on a large, vibrant green leaf. The monkey on the left is looking down, while the one on the right is looking towards the camera with its hand near its mouth. The background is a dense, lush tropical forest with various green leaves and hanging vines.

Why are tropical rain forests  
valuable and important?

# Saving the Rain Forests

by Sally Morgan

## Genre

**Expository nonfiction** gives information about real people, places, and events. Note the features in this selection that show that what you're reading about is real.



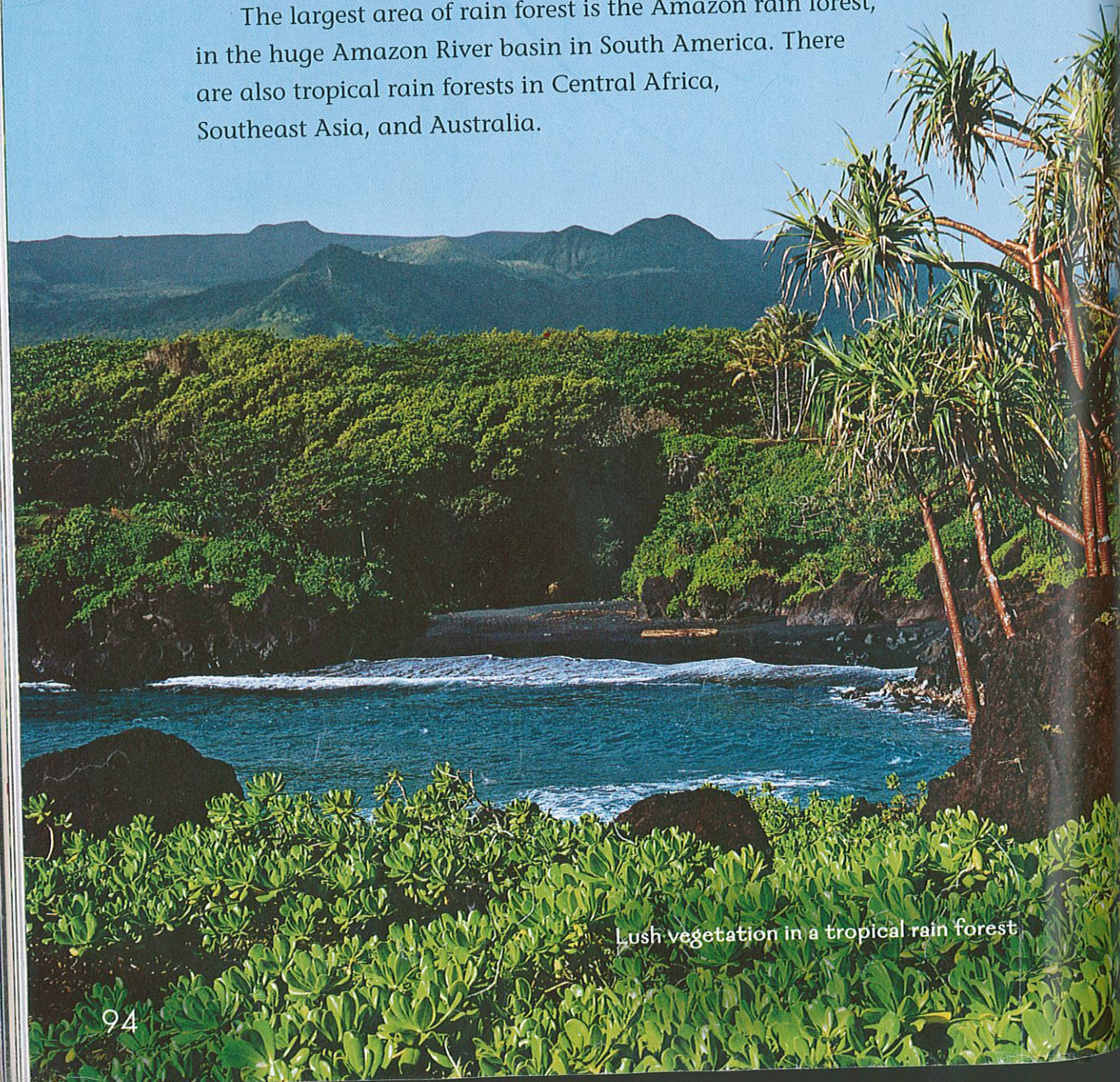
# What Is a Rain Forest?

A rain forest is a special kind of forest that grows in warm, wet places. The trees are tall and grow close together. There are three main types of rain forest.

## TROPICAL FORESTS

Tropical rain forests grow near the equator (an imaginary line around the middle of Earth). The climate is hot and rain falls nearly every day. The rain forest trees are evergreen trees—they have leaves year-round.

The largest area of rain forest is the Amazon rain forest, in the huge Amazon River basin in South America. There are also tropical rain forests in Central Africa, Southeast Asia, and Australia.



Lush vegetation in a tropical rain forest



## CLOUD FORESTS

Rain forests that cover mountains in tropical regions are called cloud forests because they are up in the clouds. The air is cooler higher up a mountain, and there is more moisture in the air. Trees in cloud forests are shorter than those in tropical forests, and they are deciduous—they drop their leaves once a year.



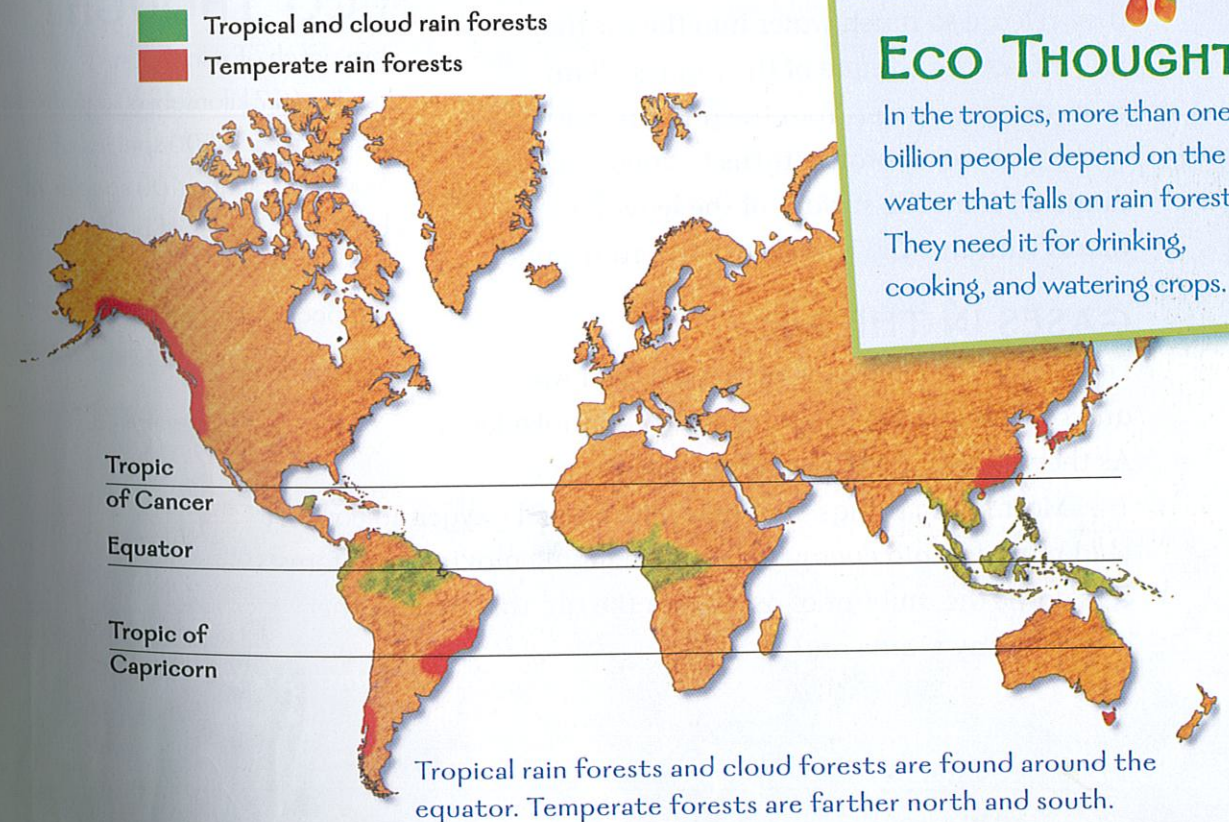
## TEMPERATE FORESTS

Temperate rain forests grow farther from the equator, where the climate is cooler. Here there are distinct seasons, when some parts of the year are cool and others warm. Many of the trees are conifer trees, which have needlelike leaves that drop gradually all through the year. The trees are covered in mosses and lichens. There are temperate rain forests in Australia, New Zealand, North America, and parts of South America.



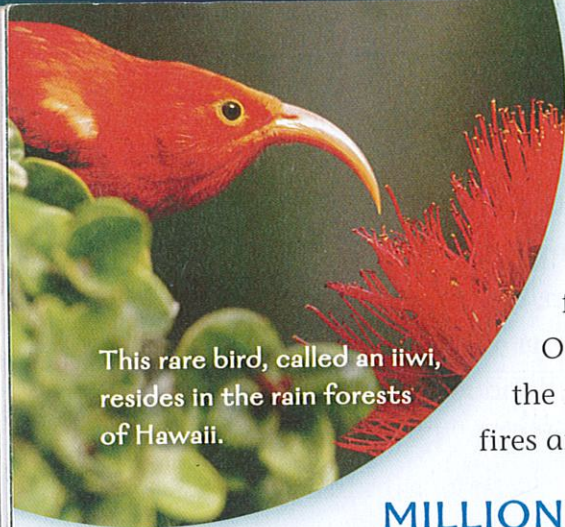
## Eco Thought

In the tropics, more than one billion people depend on the water that falls on rain forests. They need it for drinking, cooking, and watering crops.



Tropical rain forests and cloud forests are found around the equator. Temperate forests are farther north and south.





This rare bird, called an iiwi, resides in the rain forests of Hawaii.

## Rain Forests at Risk

In the last few years, huge fires in the rain forests of Brazil and Indonesia have hit the news. On television, we have seen dramatic pictures of the fires and the damage they have caused. Forest fires are common, so why should they worry us?

### MILLIONS OF PLANTS AND ANIMALS

We should worry because forests are important. Scientists think that about ten million different species (types) of plants and animals live on Earth. The rain forests are home to nearly two-thirds of these. Some animals live among the leaves, others on tree trunks, and some on the forest floor. Because of this, scientists say rain forests have a high biodiversity (variety of living things).

### WATER AND CLIMATE

We should also save rain forests because they release so much water into the air that they affect the climate of the tropics. Plant roots draw up water from the ground. A lot of the water evaporates (turns to vapor, or tiny droplets) from the surface of the leaves and mixes with the air. This helps form rain clouds.

### GASES IN THE AIR

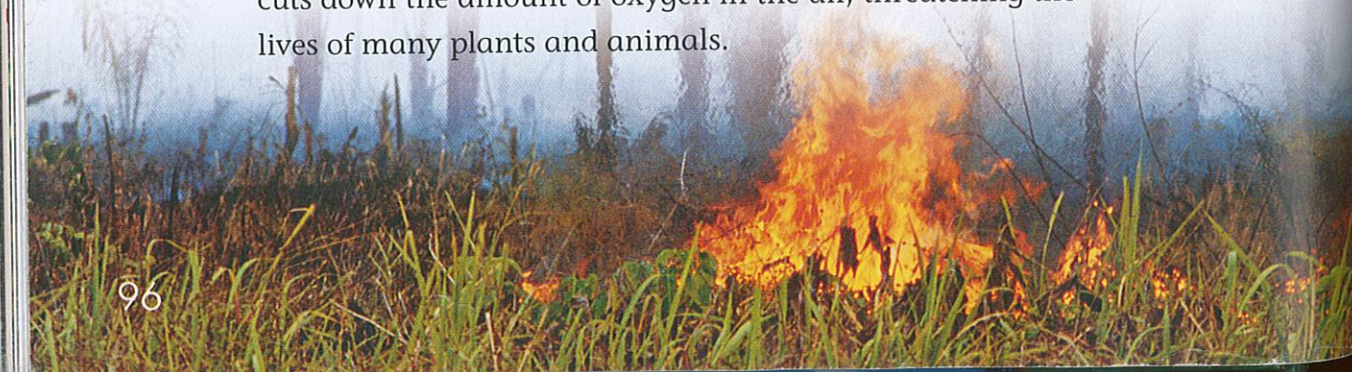
Leaves use the energy of sunlight to join water and carbon dioxide gas from the air to make food. As they do this, they give off the gas oxygen.

Most living things, including trees, need oxygen to convert food material into energy for their bodies. Removing rain forests cuts down the amount of oxygen in the air, threatening the lives of many plants and animals.

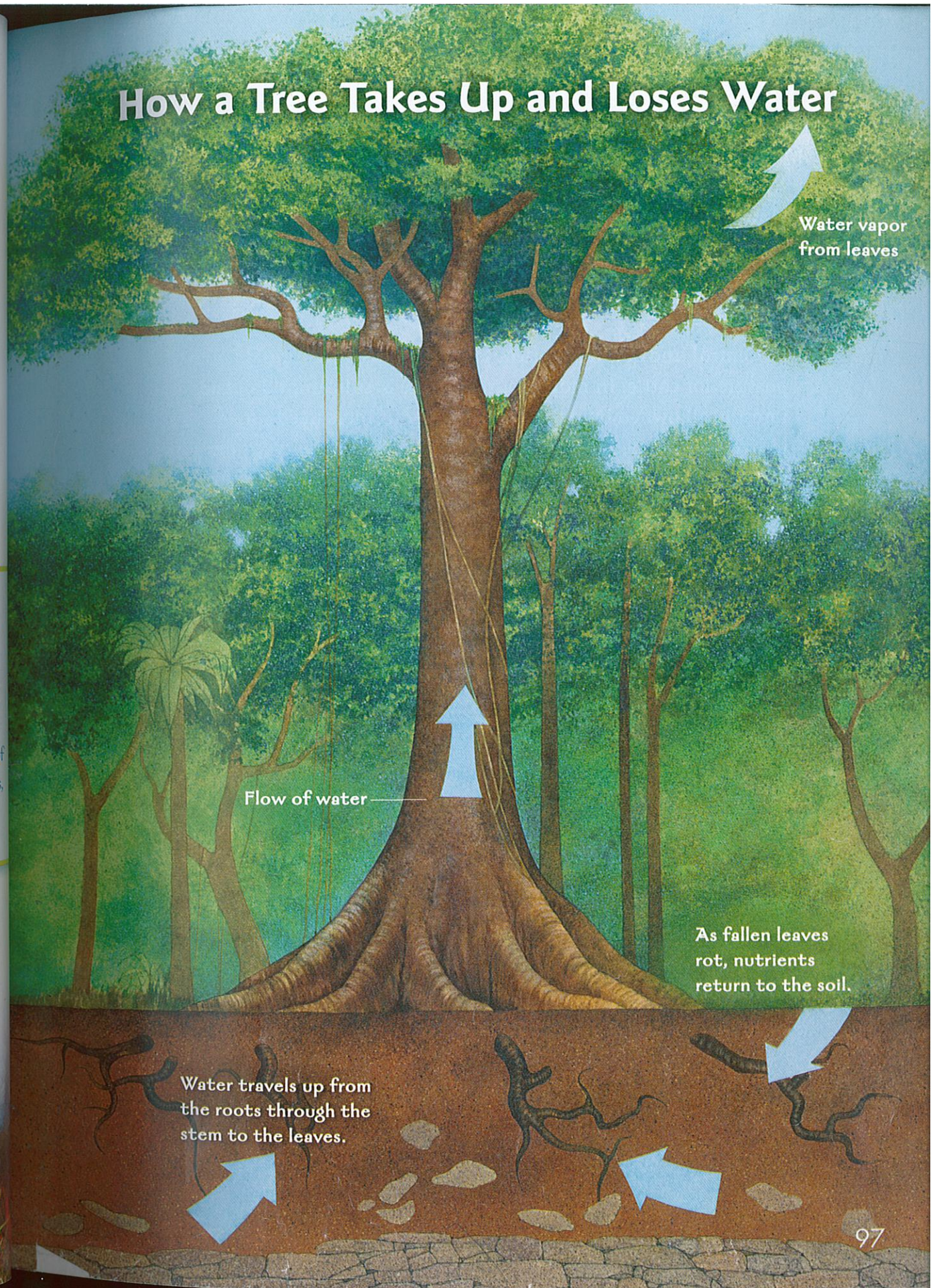


### Eco Thought

In a patch of rain forest 4 miles (6.7 kilometers) square, there can be 1,500 species of flowering plants, 400 species of birds, 150 species of butterflies, 100 species of reptiles, and 60 species of amphibians.



## How a Tree Takes Up and Loses Water



Water vapor from leaves

Flow of water

As fallen leaves rot, nutrients return to the soil.

Water travels up from the roots through the stem to the leaves.



# Disappearing Forests

As the world's population gets larger, more food and building materials are needed. Half the world's rain forests have been destroyed to provide timber or farmland. It will take centuries for them to grow back.

## LAND FOR FARMING

In Central and South America, land that was once forest is now pasture for cattle. In many countries, the best farmland outside the forest is all owned by rich people. Poorer farmers need somewhere to live, so they clear forestland for farms. They grow crops and use wood as fuel. In many parts of the world, wood is the only fuel available for cooking and for heating water.



An Indonesian farmer clearing brush after cutting trees in this rain forest area.



## TROPICAL WOODS

Tropical wood is used a lot in building. In Southeast Asia and Africa, logging for timber is the main reason for clearing the forests. Timber companies build roads into the forests so they can bring in machinery to cut down the trees and pull out the logs. The logs are sent by road, or floated down rivers, to ports. From the ports, they are exported all over the world and used to make tables and other furniture.



## BIG BUSINESS

Huge areas of rain forests are burned to clear land. On much of this land, cash crops (crops grown for sale) such as coffee, bananas, and rubber are grown instead of fruit and vegetables for local people.

Mining, industrial development, and the building of large dams all damage the rain forests too. Even tourism is threatening some of the more popular rain forests.



These young rubber trees in West Africa will be planted in land that was once rain forest.



## Washed Away

In parts of the tropics (regions of the world near the equator), there are heavy downpours of rain almost every day. About 6 inches (15 centimeters) of rain can fall in just a few hours. New York might get that much rain in a month.

### A HUGE SPONGE

The rain forest is like a huge sponge. The plants soak up most of the rainwater. This evaporates from the leaves, creating mist and low clouds.

The water in the clouds falls back onto the forest as rain. The water is recycled over and over again. Some of the water drains into streams and rivers. The rain forests release this water slowly, so the rivers never run dry.



Cascade in Hana Rain Forest

### SOIL EROSION

If the trees are cleared away, there are no roots to hold the soil. Rain washes it away. This is called soil erosion. Soil washes into streams and rivers and chokes them with mud. Aquatic (water) plants and animals that need clear and clean water die.

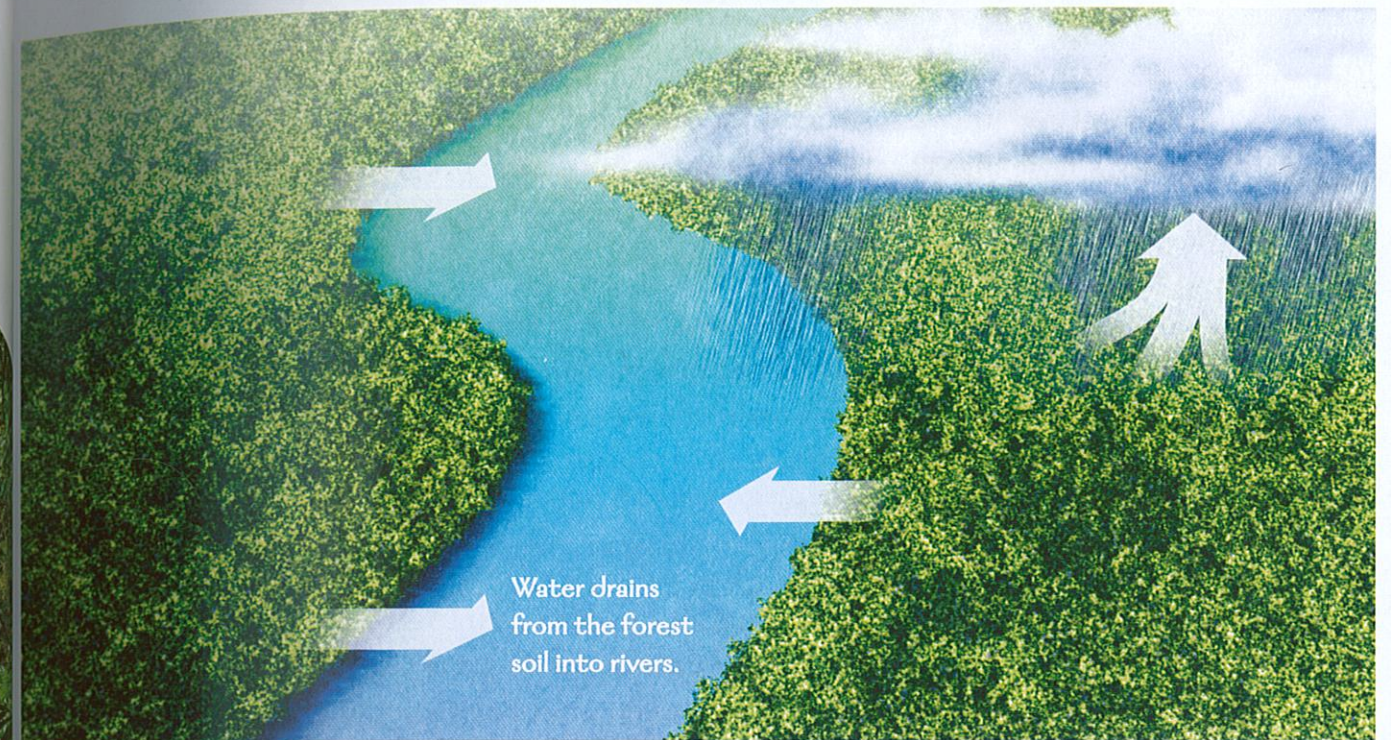
### LESS RAIN

With fewer trees, rainwater drains away quickly. At first, farmers have more water for their crops. But then, less water evaporates, so less falls as rain. The climate of the rain forest changes. Instead of reliable rainfall, there may be droughts.

Erosion in Papua New Guinea's Star Mountains caused by mining and heavy tropical rainfall



## A Normal Tropical Rain Forest



## Tropical Rain Forest with Soil Erosion





## Rich Resources

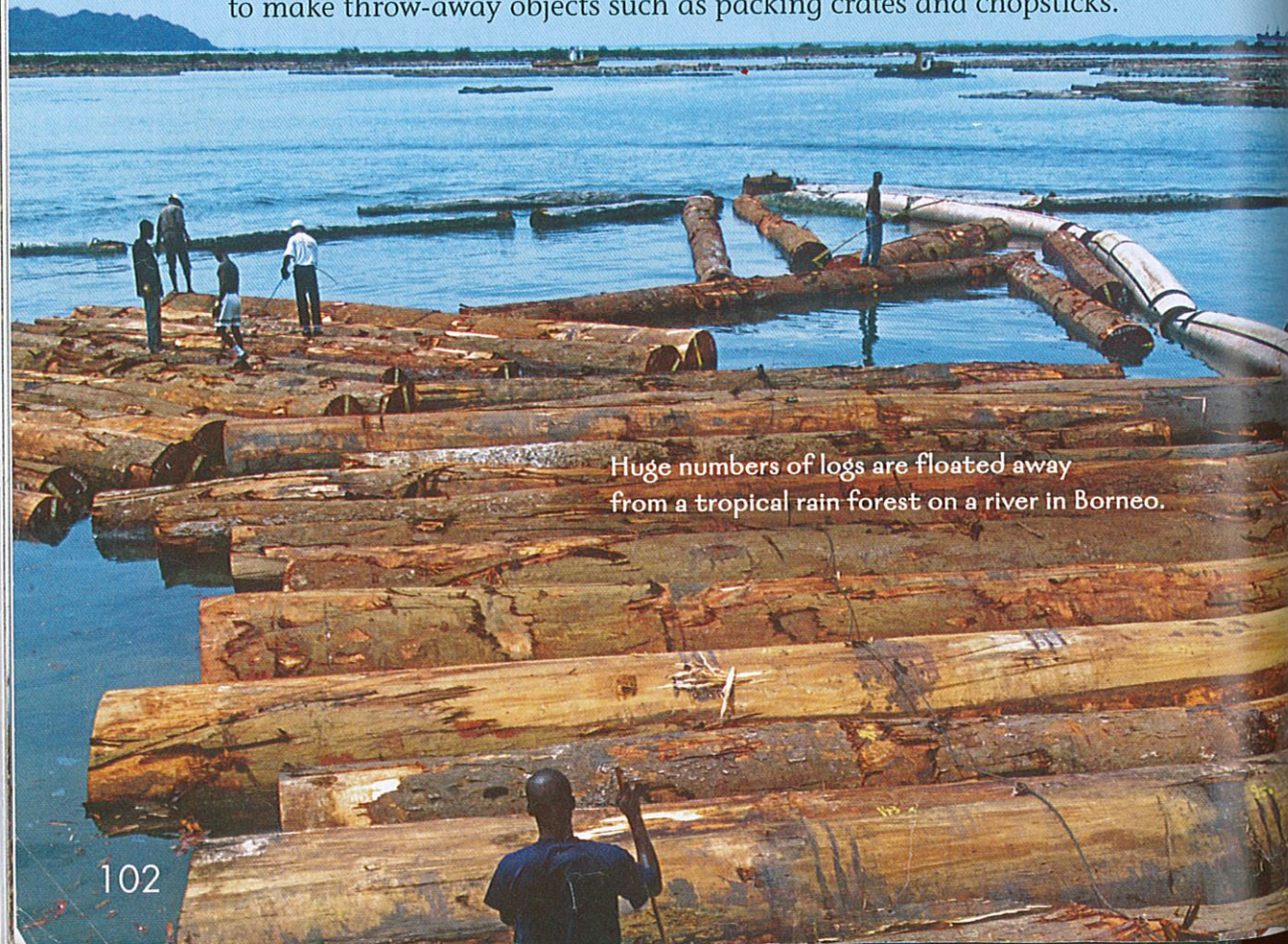
Rain forests are rich in materials used in industry. These are called resources. Wood, such as teak and mahogany, is used in building and to make furniture. The rocks beneath the forests may contain oil and metals, such as gold, silver, and zinc.

### LOGGING

Many rain forests produce hardwood, which is tough and long lasting. It is ideal for building and making furniture such as tables. Unfortunately, the best trees are scattered through the forest. In reaching them, loggers damage other trees and the soil, making it hard for young trees to grow.

### VALUABLE TIMBER

Most hardwood is sold and transported to other countries. There, it is usually sold again for hundreds of times more than the local people were paid for it. Often, this valuable wood is wasted when it is used to make throw-away objects such as packing crates and chopsticks.



Huge numbers of logs are floated away from a tropical rain forest on a river in Borneo.



This mine in Guinea-Bissau, Africa, is an important source of money, but it has damaged the rain forest.



### Eco Thought

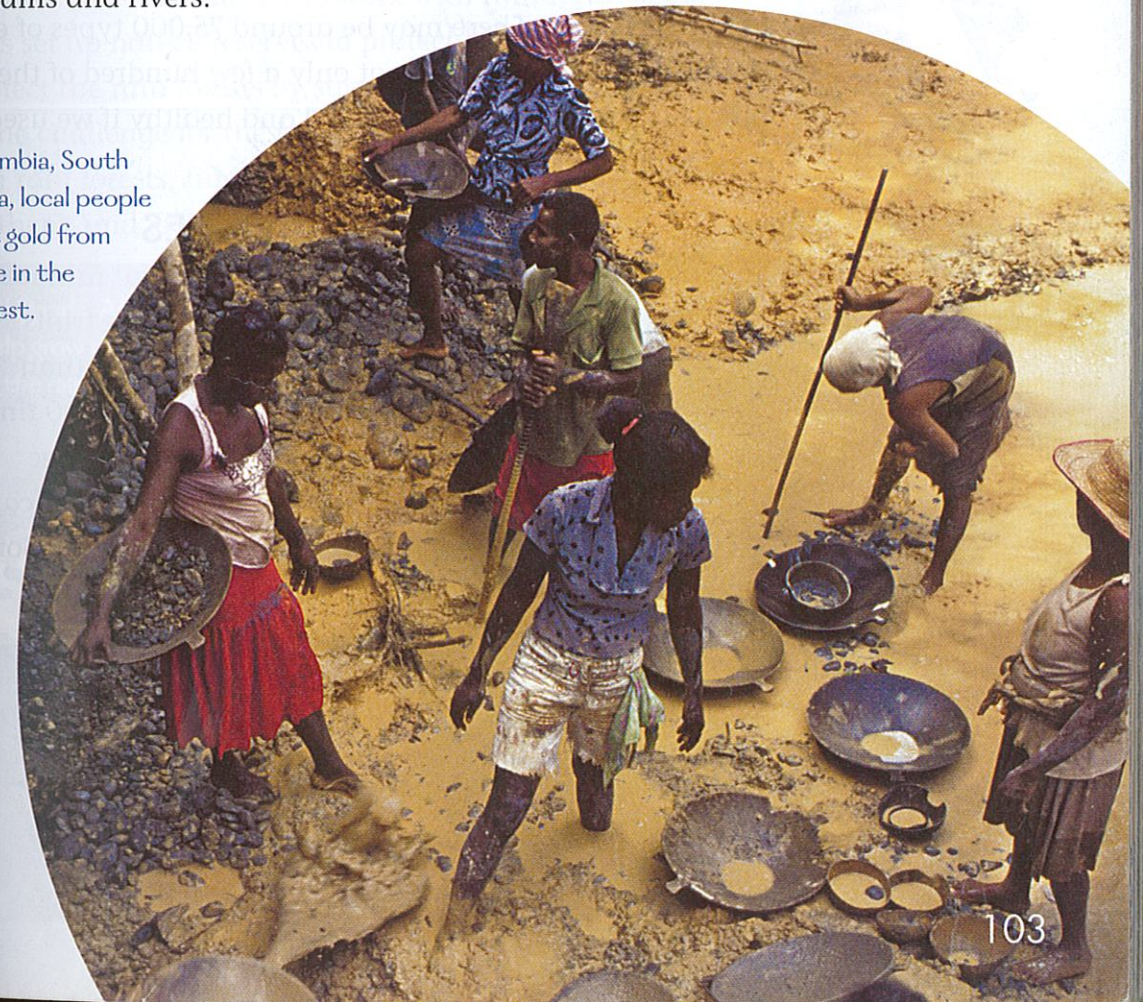
After logging, as many as three out of four of the trees left behind in the forest may have been badly damaged. It takes hundreds of years for the trees to regrow fully.

### MINING

Huge areas of forest are cleared so that mining companies can reach the rock that contains oil and valuable metals. Sometimes they remove whole hillsides.

Digging quarries produces a lot of waste material, and this is usually dumped on nearby land. Water running off this waste and from the quarries may be polluted and can harm the aquatic life of streams and rivers.

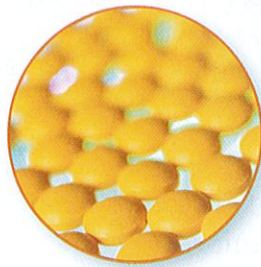
In Colombia, South America, local people extract gold from a hillside in the rain forest.





## New Finds

Scientists believe that they have only found about one-tenth of the animals and plants in the world's rain forests. New species (kinds) are being discovered every day. Many forest plants could be the source of new medicines or foods.



### NEW MEDICINES

About a quarter of all modern drugs came originally from rain forests. The forest people discovered most of these long ago. They use plants to treat headaches, fevers, cuts, snakebites, toothaches, and skin infections.

Scientists have tested only a hundredth of the rain forest plants to see if they can be used in medicine. It is important to test more, because they may help to cure many diseases.



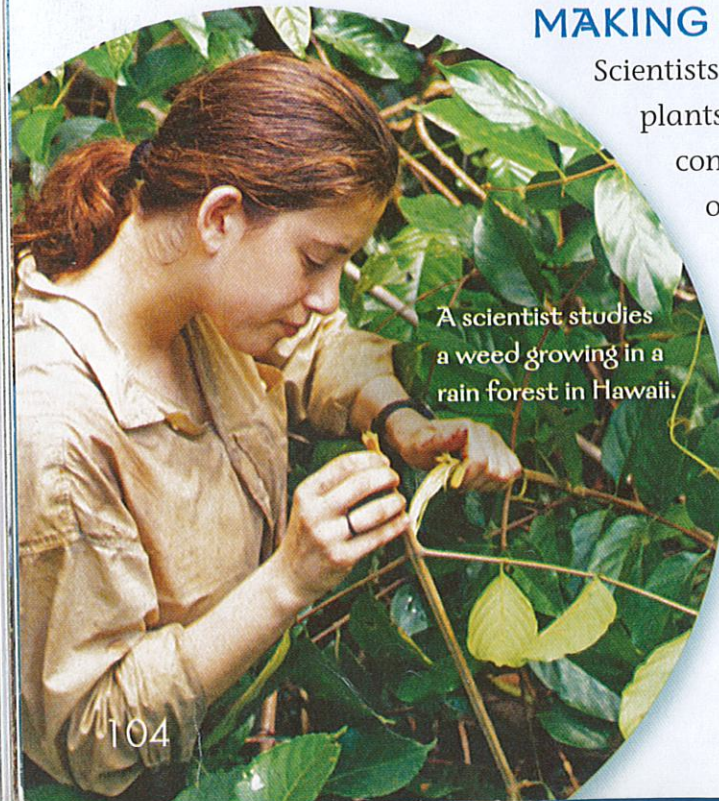
### EXOTIC FOODS

Crops such as rice, coffee, bananas, and peanuts all came first from rain forests. There may be around 75,000 types of edible plants in the world, but we eat only a few hundred of them. Our diets could be far more varied and healthy if we used more rain forest plants.

### MAKING DISCOVERIES

Scientists are discovering useful rain forest plants all the time. There are fruits containing more vitamin C than oranges, and substances 300 times sweeter than sugar. One tree produces a kind of oil that can be used in diesel engines. Some plants contain insecticides (substances that kill insect pests).

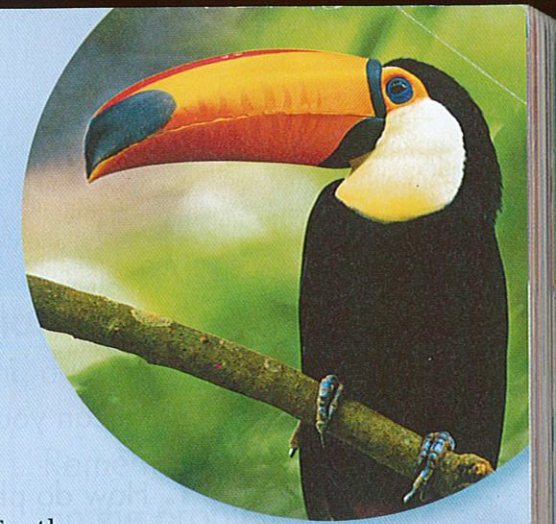
No one is sure how many useful plants there may be. But if the forests disappear, we will never know.



A scientist studies a weed growing in a rain forest in Hawaii.

## What Can We Do?

The future of the rain forests is important to everyone. People and governments need to work together to make sure this precious resource is used well.



### THE EARTH SUMMIT

In 1992, there was a meeting in Brazil called the Earth Summit. Politicians and experts from 150 countries discussed biodiversity, the importance of rain forests, and global warming. They drew up a biodiversity action plan—they agreed to list the plants and animals found in their countries, to set up more nature reserves and national parks, and to manage forests in a sustainable way.

### RAIN FOREST CHARITIES

Some charities raise money to work with rain forest peoples. Others set up nature reserves to protect wildlife. We can help to protect the rain forests by supporting these charities.

The challenge for the future is finding ways for people to live in rain forests, find sufficient food in them, earn a living from them, and look after them, all at the same time.



In Uganda, Africa, children help grow new trees to plant in the rain forest.