What Is a Biome?

Earth is covered by many types of ecosystems. Ecologists group these ecosystems into larger areas known as biomes. A biome is a large region characterized by a specific type of climate and certain types of plants and animal communities. Each biome is made up of many individual ecosystems. The map in **Figure 1** shows the locations of the world's major land, or terrestrial, biomes. In this chapter, you will take a tour through these terrestrial biomes—from lush rain forests to scorching deserts and the frozen tundra. When you read about each biome, notice the adaptations that organisms have to their very different environments.

Biomes and Vegetation

Biomes are described by their vegetation because plants that grow in an area determine the other organisms that can live there. For example, shrubs called *rhododendrons* grow in northern temperate forests because they cannot survive high temperatures. However, mahogany trees grow in tropical rain forests because they cannot survive cold, dry weather. Organisms that depend on mahogany trees will live where mahogany trees grow.

Plants in a particular biome have characteristics, specialized structures, or adaptations that allow the plants to survive in that biome. These adaptations include size, shape, and color. For example, plants that grow in the tundra tend to be short because they cannot obtain enough water to grow larger. They also have a short summer growing season, while desert plants, such as cactuses, do not have leaves. Instead, cactuses have specialized structures to conserve and retain water.

Objectives

▶ Describe how plants determine the name of a biome.

▶ Explain how temperature and precipitation determine which plants grow in an area.

▶ Explain how latitude and altitude affect which plants grow in an area.

Key Terms

biome
climate
latitude
altitude

Figure 1 ▶ The ecosystems of the world can be grouped into regions called *biomes*. These biomes shown below are named for the vegetation that grows there.

30° N

Equator

30° S

Polar ice
Tropical rain forest
Temperate forest
Taiga
Tropical savanna
Temperate grassland
Chaparral
Desert
Tundra
Mountains