If you have traveled the United States, you may have noticed different types of forests in different regions of the country. Redwoods are found along the Pacific Coast, oaks and hickories in the central part of the country, and longleaf and loblolly pines in the south. The types of forests are quite diverse.

**Objective:**

- Recognize the types of forests and the importance of forests.

**Key Terms:**

- forest
- forest canopy
- forest region
- forestry
- native forest
- old-growth forest
- regrowth forest
- taiga (boreal forest)
- temperate forest
- tropical forest

**Forests**

Simply put, a **forest** is an area with a high density of trees. A forest ecosystem includes trees and other plants, soil, water, animals, insects, fungi, and bacteria. These elements of the ecosystem interact with one another. Put another way, a forest is a living, complexly interrelated community of trees and associated plants and animals. This community is ever-changing. The study of forests and associated communities is known as **forestry**.

**FIGURE 1. Forest in Shenandoah National Park. (Courtesy, National Park Service)**
FOREST BIOMES

Three of the earth’s commonly accepted terrestrial biomes are forest in nature. They are taiga (boreal forest), temperate forest, and tropical forest.

Taiga (Boreal Forest)

Taiga (boreal forest) is the terrestrial biome that consists primarily of coniferous trees, such as pine, spruce, and fir. Taiga is vast and covers about 11 percent of the earth’s terrestrial surface. Taiga grows in the broad belt between 50 and 60 degrees north latitudes across Eurasia and North America: About two-thirds of taiga is found in Siberia. The remainder is in Canada, Scandinavia, and Alaska. Currently, taiga is being logged extensively.

Summer in taiga is short, moist, and moderately warm. The growing season lasts only 130 days. Winter is long, cold, and dry. Most precipitation falls as snow. Annual precipitation is 16 to 40 inches (40 to 100 cm).

The soil is thin, low in nutrients, and acidic.

The forest canopy, the uppermost layer of a forest created by the crowns of the trees, shades the forest floor and limits understory growth.

Wildlife includes woodpeckers, hawks, moose, bear, weasel, lynx, fox, wolf, deer, hares, chipmunks, shrews, and bats.

Temperate Forest

Temperate forest is the terrestrial biome that consists of those forest areas with temperate or moderate temperatures and relatively high precipitation. Forests of this type are dominated by deciduous trees. Temperate forests are in eastern North America, northeastern Asia, and western and central Europe. Much of the eastern United States is classified as temperate forest. Today, only relatively small pockets of original temperate forests can be found.

Most temperate forests receive 30 to 49 inches (76 to 124 cm) of precipitation distributed evenly throughout the year. Some temperate forests are called temperate rainforests because

FURTHER EXPLORATION…

ONLINE CONNECTION: Forest Maps

Expand your knowledge of forest types in the United States by going to http://nationalatlas.gov/mapmaker?AppCmd=CUSTOM&LayerList=Forcov&visCats=CAT-bio,CAT-bio. Begin by selecting “Forest Cover Types” in the right-hand menu. Click the “Redraw Map” button above. Study the distribution of forest types by dominant tree species.

Try opening maps showing “Forest Fragmentation—Causes” and “Forest Fragmentation—Classification.” Study the maps to develop a stronger understanding of the types of forests and their distribution in the United States.
they receive 80 to 152 inches (203 to 386 cm) of rainfall a year. Temperate rainforests can be found in the Pacific Northwest of the United States.

Temperate forests have well-defined seasons. The growing season lasts 140 to 200 days during 4 to 6 frost-free months. Temperatures range from \(-22^\circ\) to \(86^\circ\)F \((-30^\circ\) to \(30^\circ\)C).

Soil is fertile, enriched with decaying litter.

The forest canopy is moderately dense and allows light to penetrate. As a result, a well-developed and richly diversified understory of vegetation and stratification occurs.

Common tree species are oak, hickory, beech, hemlock, maple, basswood, cottonwood, elm, and willow. Wildlife includes squirrels, rabbits, skunks, birds, deer, mountain lion, bobcat, timber wolf, fox, and black bear.

**Tropical Forest**

Tropical forest is the terrestrial biome that consists of those forest areas found in regions of the world where temperatures are high throughout the year and rain falls almost daily. Tropical forest exists near the equator, within the area bounded by latitudes 23.5 degrees N and 23.5 degrees S. More than half of tropical forests have been subject to deforestation.

The annual rainfall ranges from 80 to 180 inches (203 to 457 cm). The tropical forest does not have a winter. It does have two seasons, rainy and dry. Since tropical forest is near the equator, the day length is 12 hours and varies little. The average temperature is 68 to 77°F (20 to 25°C) and varies little during the year.

The soil is low in nutrients because of heavy leaching and is acidic. Decomposition of organic matter is rapid.

The forest canopy is multilayered and continuous, allowing little light to reach the forest floor.

The diversity of living organisms is very high. There may be as many as 100 different tree species in 1 square kilometer. Trees are tall, with buttressed trunks and shallow roots. They are mostly evergreen, with large dark green leaves. Wildlife includes many birds, bats, small mammals, and insects.

**FOREST REGIONS OF THE UNITED STATES**

At one time, nearly half of the United States, three-quarters of Canada, western Asia, almost all of Europe, and many other areas in the world were forested. Today, an estimated one-half of the world’s forest is gone. Only about 22 percent of the earth’s old-growth (original) forests
remain. Most of the remaining old-growth forests are located in the Canadian, Alaskan, and Russian boreal; the tropical forests of the northwestern Amazon Basin; and the Guyana Shield in northeastern South America.

A forest region is an area with a predominance of related tree species present. A region is also based on the climate that promotes the forest growth. The United States can be divided into nine major forest regions. They are the northern coniferous forest region, northern hardwood forest region, central broadleaf forest region, southern forest region, bottomland hardwood forest region, Rocky Mountain forest region, Pacific Coast forest region, tropical forest region, and Hawaiian forest region.

**Northern Coniferous Forest Region**

The northern coniferous forest region is the largest forest region. It spreads along the Canada–United States border. The northern coniferous forest region is characterized by swamps, marshes, rivers, and lakes, along with a cold climate. The northern portion of this region produces small-size trees that consist primarily of black spruce, white spruce, Sitka spruce, balsam fir, larch, paper birch, aspen, white pine, jack pine, poplar, and willow. Conifers dominate.

**Northern Hardwood Forest Region**

The northern hardwood forest region extends from southeastern Canada through New England to the northern Appalachian Mountains and westward beyond the Great Lakes. This forest region is a blend of species found in the northern coniferous forest and central broadleaf forest regions. Tree species of this region include spruce, birch, beech, basswood, maple, and northern red oak.

**Central Broadleaf Forest Region**

The central broadleaf forest region is located east of the Mississippi River and south of the northern hardwood forest region. Much of the forest land in the region has been cleared, and the land used for production agriculture. The central broadleaf forest region supports more varieties and species of trees than any other forest region in the United States. It is composed mostly of hardwood species, including oak, hickory, ash, elm, maple, cherry, sweetgum, beech,
yellow poplar, walnut, cottonwood, sycamore, and dogwood. Coniferous species include Virginia pine, pitch pine, shortleaf pine, eastern redcedar, and some hemlock.

**Southern Forest Region**

The southern forest region is located in the southeastern part of the United States and ranges south from Delaware to Florida and west to Texas and Oklahoma. It is one of the most important timber-producing areas in North America. Major coniferous tree species include Virginia, longleaf, loblolly, shortleaf, and slash pines. Some important hardwood species are oak, yellow poplar, maple, blackgum, sweetgum, beech, ash, elm, oak, and hickory.

**Bottomland Hardwood Forest Region**

The bottomland hardwood forest region is found mostly along the Mississippi River. Key forest species are oak, sweetgum, blackgum, and baldcypress.

**Rocky Mountain Forest Region**

The Rocky Mountain forest region extends from Canada to Mexico and accounts for about 27 percent of U.S. lumber. Important commercial tree species are western white pine, ponderosa pine, and lodgepole pine. Other trees common to the region are spruce, fir, larch, western redcedar, hemlock, and aspen.
**Pacific Coast Forest Region**

The Pacific Coast forest region is located in northern California, Oregon, and Washington. It is the most productive forest region in the United States. Some important species are Douglas fir, western hemlock, western redcedar, Pacific yew, ponderosa pine, Sitka spruce, sugar pine, lodgepole pine, noble fir, and white fir. The region is also home to the redwood, and giant sequoia. Important hardwoods are oak, cottonwood, maple, and alder.

**Tropical Forest Region**

The tropical forest region consists of portions of southern Florida and southeastern Texas. It is the smallest forest region in the United States. Tree species include palms, mahogany, mangrove, and bay.

**Hawaiian Forest Region**

The Hawaiian forest region is subdivided into wet and dry regions. Tree species in the wet forest regions are ohia, boa, tree fern, kukui, tropical ash, mamani, and eucalyptus. The dry forest regions are home to koa, haole, algarroba, monkey pod, and wiliwili trees.

**OTHER FOREST CLASSIFICATION TERMS**

Some other terms are used when classifying forests.

An uncut forest is commonly known as an old-growth forest. Uncut forest is also referred to as virgin forest, primeval forest, and primary forest. Most old-growth forest that remains in the United States is in the Pacific Coast forest region. Designated national parks and national forests protect much of the remaining old-growth forest.

A native forest is a forest in which the species are voluntarily growing and are naturally present in the area. Native forests often have a variety of species and provide wildlife habitat. The majority of the forests east of the Rocky Mountains have been cut one or more times. After a forest has been logged, it may regenerate. A forest area that has experienced new growth is known as regrowth forest. Lumber companies harvest trees and replant trees with the intention of harvesting the regrowth forest approximately a quarter century later.

**Summary:**

A forest is an area with a high density of trees.

Taiga (boreal forest) consists primarily of coniferous trees, such as pine, spruce, and fir. Taiga is vast and grows in the broad belt across Eurasia and North America.

Temperate forest consists of those forest areas with moderate temperatures and relatively high precipitation. Forests of this type are dominated by deciduous trees.
Temperate forests are found in eastern North America, northeastern Asia, and western and central Europe.

Tropical forest is found in regions of the world where temperatures are high throughout the year and rain falls almost daily. Tropical forest exists near the equator.

A forest region is an area with a predominance of related tree species present. The United States can be divided into nine major forest regions. They are the northern coniferous forest region, northern hardwood forest region, central broadleaf forest region, southern forest region, bottomland hardwood forest region, Rocky Mountain forest region, Pacific Coast forest region, tropical forest region, and Hawaiian forest region.

**Checking Your Knowledge:**

1. What is a forest?
2. How do taiga, temperate forest, and tropical forest compare?
3. What are the nine major forest regions in the United States?
4. What are some economic benefits forests provide?
5. What are some environmental benefits forests provide?

**Expanding Your Knowledge:**

Determine the type of forest found in the region where you live. Identify the dominant tree species.

**Web Links:**

- **Facts on Forests and Forestry**
  [http://www.forestfacts.org/l_2/forests_1.htm](http://www.forestfacts.org/l_2/forests_1.htm)

- **The Forest Biome**
  [http://www.ucmp.berkeley.edu/exhibits/biomes/forests.php](http://www.ucmp.berkeley.edu/exhibits/biomes/forests.php)

- **U.S. Forests—Classification of All Forests by Forest Region**
  [http://forestry.about.com/cs/treeid/a/all_type_us.htm](http://forestry.about.com/cs/treeid/a/all_type_us.htm)

- **Forest Resources of the United States**
  [http://nationalatlas.gov/articles/biology/a_forest.html](http://nationalatlas.gov/articles/biology/a_forest.html)

- **Agricultural Career Profiles**
  [http://www.mycaert.com/career-profiles](http://www.mycaert.com/career-profiles)