



Climate and Vegetation

A HUMAN PERSPECTIVE A little gold and bitter cold—that is what thousands of prospectors found in Alaska and the Yukon Territory during the Klondike gold rushes of the 1890s. Most of these fortune hunters were unprepared for the harsh climate and inhospitable land of the far north. Winters were long and cold, the ground frozen. Ice fogs, blizzards, and avalanches were regular occurrences. You could lose fingers and toes—even your life—in the cold. But hardy souls stuck it out. Legend has it that one miner, Bishop Stringer, kept himself alive by boiling his sealskin and walrus-sole boots and then drinking the broth.

Shared Climates and Vegetation

The United States and Canada have more in common than just frigid winter temperatures where Alaska meets northwestern Canada. Other shared climate and vegetation zones are found along their joint border at the southern end of Canada and the northern end of the United States.

If you look at the map on page 125, you will see that the United States has more climate zones than Canada. This variety, ranging from tundra to tropical, occurs because the country extends over such a large area north to south. Most of the United States is located in the mid-latitudes, where the climates are moderate. Canada is colder because so much of it lies far north in the higher latitudes.

COLDER CLIMATES The Arctic coast of Alaska and Canada have tundra climate and vegetation. Winters are long and bitterly cold, while summers are brief and chilly. Even in July, temperatures are only around 40°F. The land is a huge, treeless plain. Much of the rest of Canada and Alaska have a subarctic climate, with very cold winters and short, mild summers. A vast forest of needle-leafed evergreens covers the area. In some places, there is **permafrost**, or permanently frozen ground.

The Rocky Mountains and the Pacific ranges have highland climate and vegetation. Temperature and vegetation vary with elevation and latitude. Generally, the temperature is colder and the vegetation is more sparse in the higher, more northerly mountains. The mountains also influence the temperature and precipitation of surrounding lower areas. For example, the



MOVEMENT The snowmobile has replaced the dogsled as transportation in many parts of the Northwest Territories. Here, a mother picks up her children from school.

Main Ideas

- Almost every type of climate is found in the 50 United States because they extend over such a large area north to south.
- Canada's cold climate is related to its location in the far northern latitudes.

Places & Terms

permafrost

prevailing westerlies

Everglades

CONNECT TO THE ISSUES

URBAN SPRAWL The rapid spread of urban sprawl has led to the loss of much vegetation in both the United States and Canada.

coastal ranges protect the coast from cold Arctic air from the interior. In the United States, the western mountains trap Pacific moisture. This makes lands west of the mountains rainy and those east very dry.

MODERATE CLIMATES The north central and northeastern United States and southern Canada near the U.S. border have a humid continental climate. Winters are cold and summers warm. Climate and soil make this one of the world's most productive agricultural areas, yielding an abundance of dairy products, grain, and livestock. In the northern part of this climate zone, summers are short. There are mixed forests of deciduous and needle-leaved evergreen trees. Most of the population of Canada is concentrated here. In the southern part of this zone, which is in the United States, summers are longer. For the most part, deciduous forests are found east of the Mississippi River and temperate grasslands are found to the west. **A**

The Pacific coast from northern California to southern Alaska, which includes British Columbia, has a climate described as marine west coast. This climate is affected by Pacific Ocean currents, the coastal mountains, and the **prevailing westerlies**—winds that blow from west to east in the middle of the latitudes. The summers are moderately warm. The winters are long and mild, but rainy and foggy. Vegetation is mixed, including dense forests of broad-leaved deciduous trees, needle-leaved evergreens, and giant California redwoods. The Washington coast even has a cool, wet rain forest.



Seeing Patterns

A Why is most of Canada's population clustered in the humid continental region?

Differences in Climate and Vegetation

The milder, dry, and tropical climates of North America are found south of 40°N latitude. Much of the United States is located in these climate zones; little of Canada is.

MILDER CLIMATES Most southern states have a humid subtropical climate. This means that summers are hot and muggy, with temperatures ranging from about 75°F to 90°F. Winters are usually mild and cool. Moist air from the Gulf of Mexico brings rain during the winter. The combination of mild temperatures and adequate rainfall provides a long growing season for a variety of crops—from citrus fruits in Florida to peanuts in Georgia. Broad-leaved evergreen trees and needle-leaved evergreen trees are found in this region. The central and southern coasts of California have a Mediterranean climate. Summers are dry, sunny, and warm. Winters are mild and somewhat rainy. Temperatures range from 50°F to 80°F year-round. A long growing season and irrigation make this a rich farming area for fruits and vegetables. **B**

DRY CLIMATES The Great Plains and dry northern parts of the Great Basin have a semiarid climate. This means dry weather—only about 15 inches of rain annually—and vegetation that is mainly short grasses and shrubs. The southwestern states have a desert climate. In these states, the weather is usually hot and dry. Less than 10 inches of rain falls each year. Some cactus plants thrive, but much of the area is barren rock or sand. Large desert areas are the Mojave and the Sonoran.

TROPICAL CLIMATES In the United States, only Hawaii and southern Florida have tropical climates. The islands of Hawaii have a tropical wet climate that supports lush rain forests. Temperatures vary only

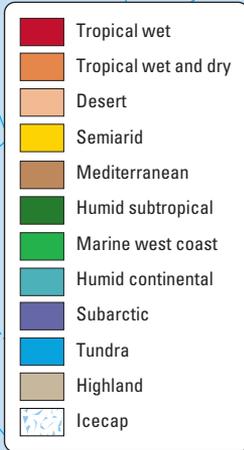


Making Comparisons

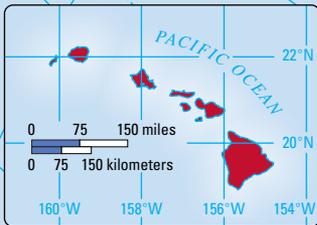
B Why don't central and southern California have a marine west coast climate?

Climate and Vegetation of the U.S. and Canada

Climate



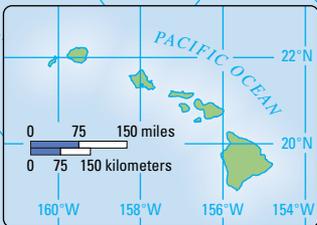
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Azimuthal Equal-Area Projection



Vegetation



0 250 500 miles
0 250 500 kilometers
Azimuthal Equal-Area Projection



SKILLBUILDER: Interpreting Maps

- LOCATION** Between approximately what degrees of longitude is the semiarid climate found?
- REGION** Which type of vegetation covers most of Canada?



REGION Deadly ice storms like this one in Watertown, New York, create chaos each winter, especially in heavily populated areas. **What are some of the hazards of this form of extreme weather?**

a few degrees in the 70s°F. Mount Waialeale (wy•AH•lay•AH•lay) on Kauai island receives about 460 inches of rain annually, and is one of the wettest spots on earth. Southern Florida has a tropical wet and dry climate. It is nearly always warm, but has wet and dry seasons. Vegetation is mainly tall grasses and scattered trees, like those in the **Everglades**, a huge swampland that covers some 4,000 square miles. ▶

Effects of Extreme Weather

Weather in the United States and Canada can be harsh and sometimes deadly. You can see the areas affected by extreme weather and climate conditions by looking at the natural hazards map on page 107.

In both cold and mild climates, severe storms can trigger widespread devastation. Warm air from the Gulf of Mexico and cold Canadian air masses sometimes clash over the plains region to produce violent thunderstorms, tornadoes, and blizzards. As you read in Unit 1, tornadoes strike so often in an area of the Great Plains that it is called “Tornado Alley.” In summer and fall, hurricanes that sweep along the Atlantic and Gulf coasts can cause great damage. Winter snowstorms may bring normal life to a temporary halt in many cities, such as the one shown in the photo on this page.

Disasters can also result from too much precipitation in a short time or too little over a long period. Heavy rainfall can cause flooding. Lands along major rivers, such as the Mississippi, are especially at risk. Too little rain or too much heat may bring on droughts and dust storms or spark destructive forest fires.

In this section, you read about the varied climates and vegetation of the United States and Canada. In the next section, you will learn how physical geography has shaped life in these countries.



Making Comparisons

▶ How do climate and vegetation differ between Mediterranean and tropical climates?

SECTION 2 Assessment

1 Places & Terms

Identify and explain where in the region these would be found.

- permafrost
- prevailing westerlies
- Everglades

2 Taking Notes

REGION Review the notes you took for this section.



- What climate regions do the United States and Canada share?
- What climate regions are found in the United States but not in Canada?

3 Main Ideas

- How do the prevailing westerlies change the climate of parts of the United States and Canada?
- In which region would you find the dry climates?
- In which climate type would you find the Everglades?

4 Geographic Thinking

Seeing Patterns Why doesn't all of Alaska have cold, snowy winters? **Think about:**

- location
- prevailing westerlies



MAKING COMPARISONS Make a list of five Canadian cities and five U.S. cities. Then use the Internet to find out the average monthly temperature and monthly rainfall for each city. Create a **database** with the information. Then summarize your findings.