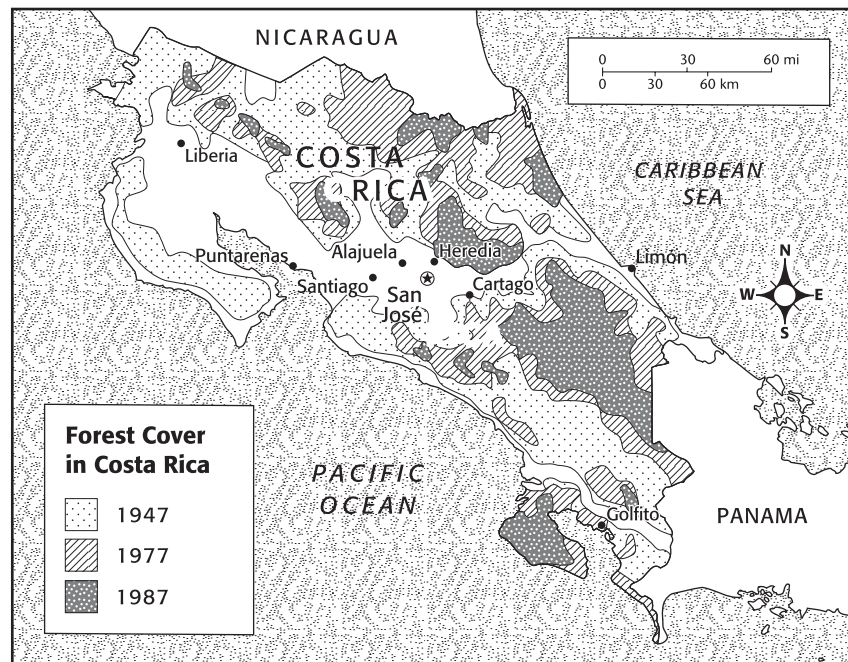


# Map Skills



Costa Rica, a country in Central America, was once nearly covered with rain forest. Today, farmers and ranchers have cleared much of the forest, a process called *deforestation*. Deforestation destroys the homes of thousands of species.

**Use the map above to answer the questions below.**

**1. Using a Key** In which year did Costa Rica have the most forest cover? The least?

\_\_\_\_\_

**2. Analyzing Data** About what fraction of Costa Rica was still covered with forest in 1987?

\_\_\_\_\_

**3. Analyzing Data** Was more forest removed between 1947 and 1977 or between 1977 and 1987?

\_\_\_\_\_

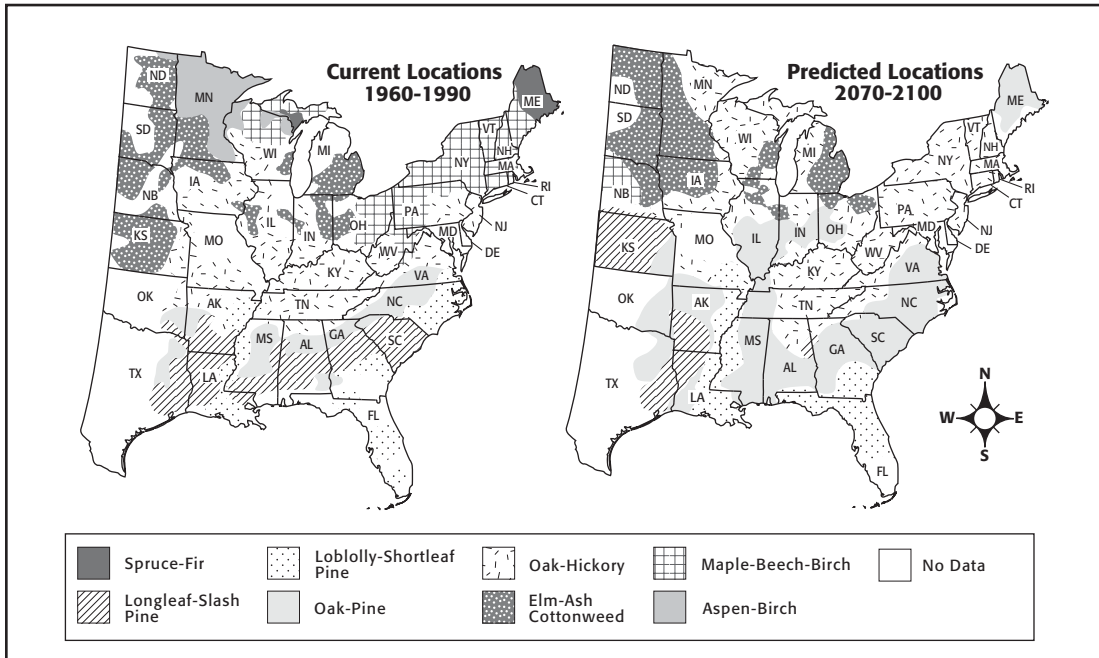
**4. Inferring Relationships** What is the relationship between the locations of cities and the locations of the remaining forest?

\_\_\_\_\_

**5. Inferring Relationships** Why might the decline in deforestation have occurred when it did?

\_\_\_\_\_

# Map Skills



The Experimental Method is the way scientists develop a hypothesis or theory. To test their hypotheses, scientists develop models or experiments. For example, the map on the right is a model scientists created to study a hypothesis about the effects of climate change on tree populations in the eastern United States. It was created to show the changes in tree species' locations that may occur based on projected temperature increase. The other map shows the current tree species' locations for comparison.

Use the maps above to answer the questions below.

- Using a Key** Currently, what are the predominant tree species in New England? Based on the model, what may be the predominant species in 2100?

\_\_\_\_\_

- Analyzing Data** What general trend in tree migration does this model show?

\_\_\_\_\_

- Inferring Relationships** Maple syrup, produced from maple trees, is an important industry in New England. Based on the model, what could be the effect of global warming on that industry?

\_\_\_\_\_

- Testing a Hypothesis** What sort of experiment could scientists create to test the hypothesis modeled in the map on the right?

\_\_\_\_\_

# Map Skills

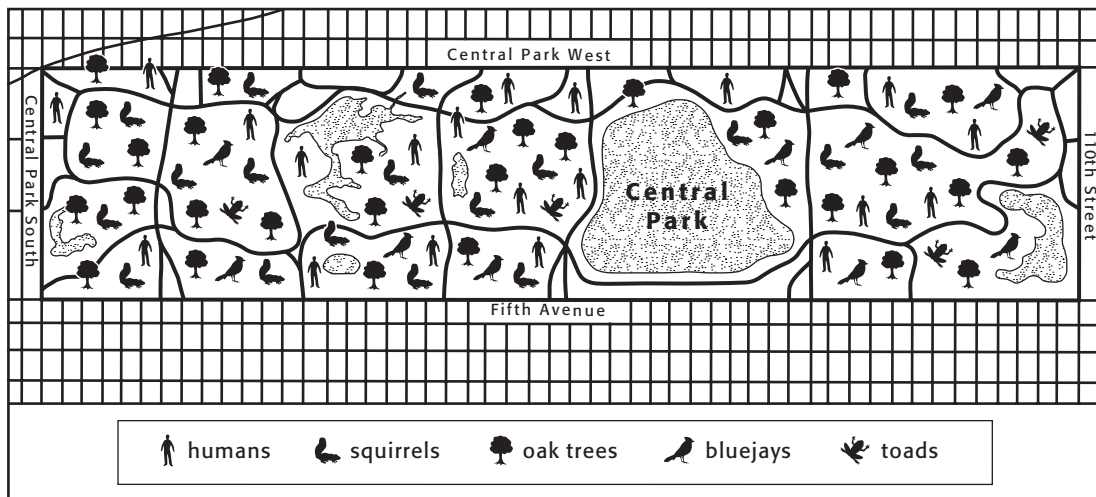


The Amazon River Basin is the largest river drainage system in the world. The system drains nearly 2.3 million square miles.

**Use the map above to answer the questions below.**

- 1. Using a Key** In what country does the Amazon River begin? In what country does it end?  
\_\_\_\_\_
- 2. Finding Locations** Through how many countries do the Amazon River and its tributaries flow?  
\_\_\_\_\_
- 3. Inferring Relationships** What might be one benefit to humans of this river system?  
\_\_\_\_\_
- 4. Understanding Topography** Examine the course of the Amazon River and its tributaries. In which direction do you think the rivers are flowing? Explain your answer.  
\_\_\_\_\_
- 5. Analyzing Data** If it rains heavily in the northern Andes Mountains, where does that rainwater eventually end up?  
\_\_\_\_\_

# Map Skills



A habitat does not have to be large in size. Small areas, such as your backyard, can be home to many communities of species. Every day in New York City's Central Park, hundreds of different species interact.

**Use the map above to answer the questions below.**

- 1. Analyzing Data** Identify one organism, one population, and one community.

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- 2. Using a Key** Which organism has the largest population? Which organism has the smallest population?

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- 3. Analyzing Data** Do the items in the key represent biotic or abiotic factors?

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- 4. Inferring Relationships** List specific characteristics of this park that make it a habitat.

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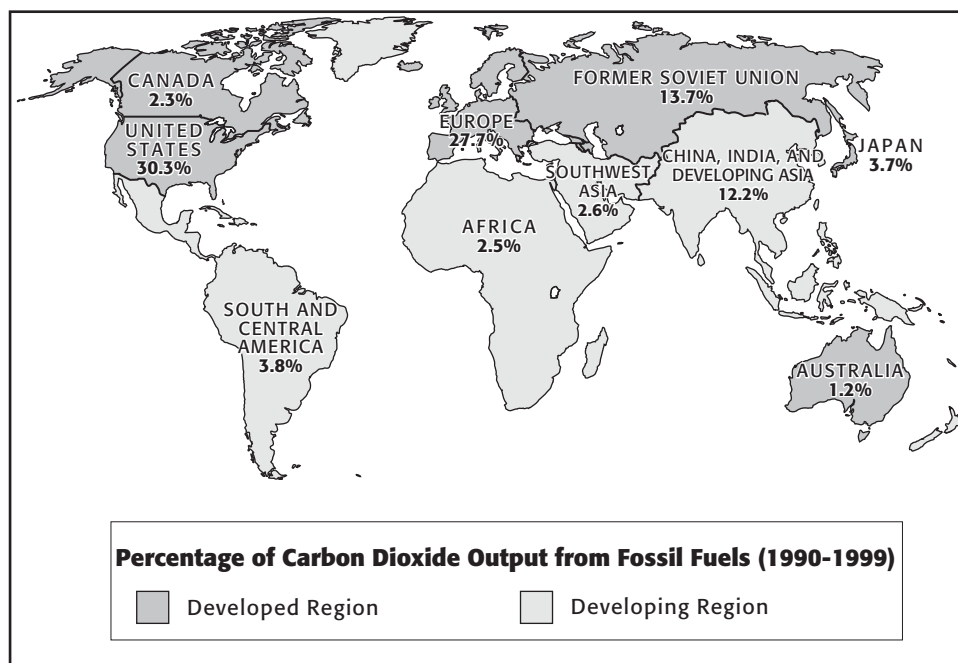
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- 5. Making a Hypothesis** If the human population decreased, how do you think other populations would be affected?

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# Map Skills

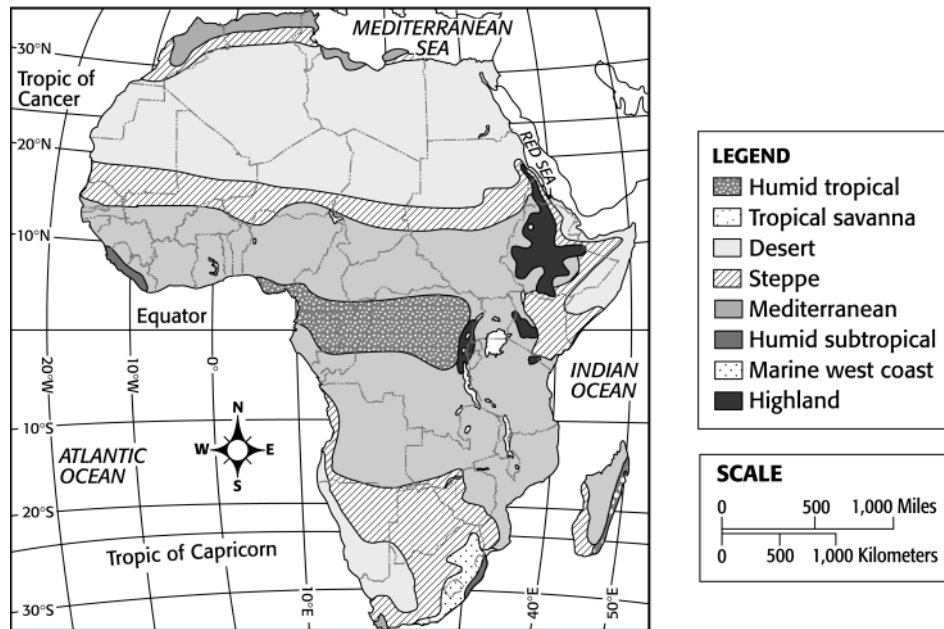


Global warming is a rise in the average temperature of Earth's atmosphere over a long period of time. It is caused by the release of gases, especially carbon dioxide. Harmful levels of carbon dioxide are emitted into the air by car exhaust, power plants, and other human activities. This map shows which regions of Earth contribute most to global warming.

Use the map above to answer the questions below.

- 1. Using a Key** Are developed regions or developing regions responsible for the highest percentage of carbon dioxide output from fossil fuels?  
\_\_\_\_\_
- 2. Finding Locations** Which region has the highest percentage of carbon dioxide output? the lowest?  
\_\_\_\_\_
- 3. Making Conclusions** Why do you think developed regions have a higher output of carbon dioxide?  
\_\_\_\_\_  
\_\_\_\_\_
- 4. Making a Hypothesis** What might explain the fact that although Australia is developed, it has the lowest percentage of carbon dioxide output?  
\_\_\_\_\_  
\_\_\_\_\_

# Map Skills



This thematic map of Africa shows the continent's many biomes. Each biome's conditions determine the plants and animals that live there. For example, the tropical savanna is characterized by lions, giraffes, and zebras.

**Use the map above to answer the questions below.**

**1. Using a Key** What are the two most common biomes in Africa?

\_\_\_\_\_

**2. Finding Locations** What biome is located only at the equator?

\_\_\_\_\_

**3. Finding Locations** What biome is located at both the tropic of Capricorn and the tropic of Cancer?

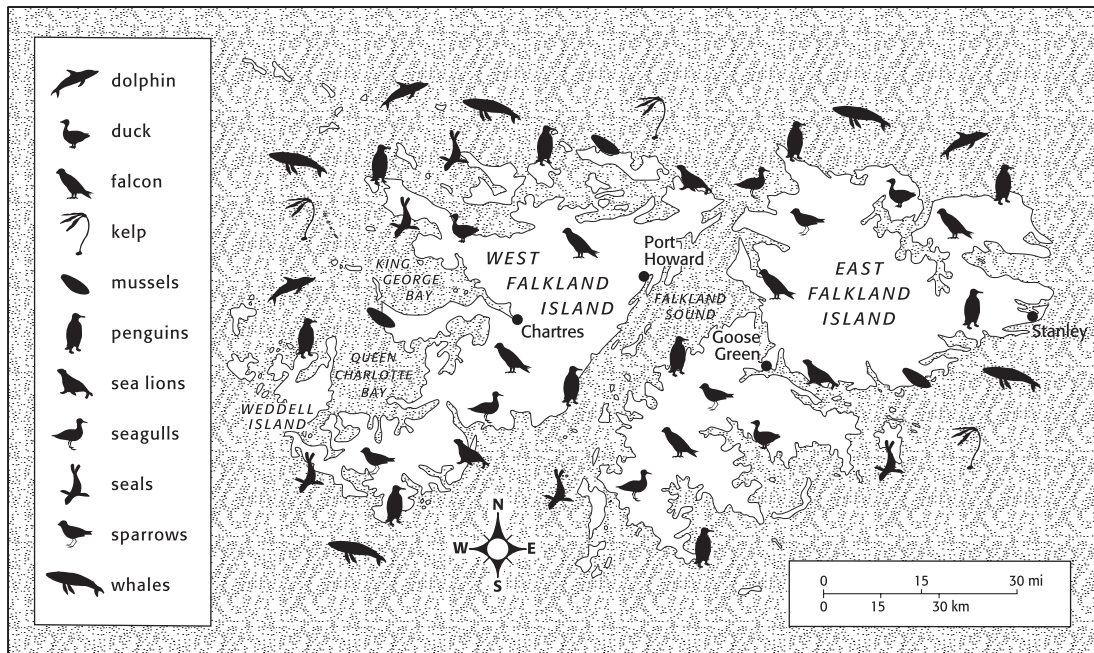
\_\_\_\_\_

**4. Inferring Relationships** Which is important in determining the characteristics of biomes—latitude or longitude? Explain your answer.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Skills Worksheet

## AQUATIC DIVERSITY

**Map Skills**

The Falkland Islands are located in the South Atlantic Ocean, not too far from the southern tip of South America. Millions of penguins breed on the islands. Sea lions, seals, dolphins, and many birds are also native to the area. The map shows where these organisms are found.

**Use the map above to answer the questions below.**

**1. Using a Key** According to the map, how many species are native to the Falkland Islands?

\_\_\_\_\_

**2. Analyzing Data** Which species are part of a marine ecosystem?

\_\_\_\_\_

\_\_\_\_\_

**3. Using a Key** Which species has the largest population?

\_\_\_\_\_

**4. Inferring Relationships** Which species do you think is at the top of the food chain? Explain your answer.

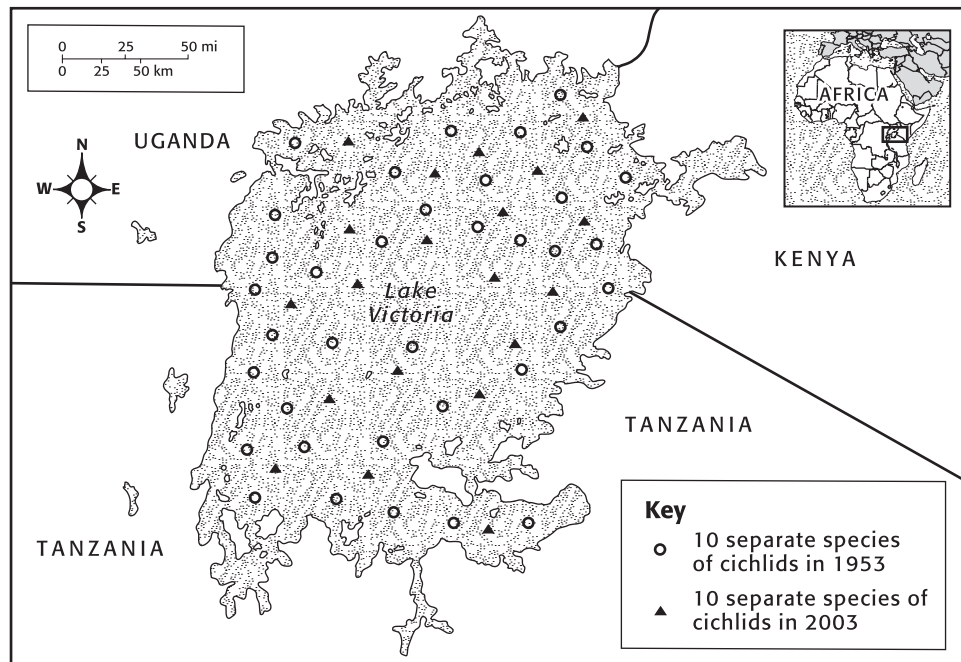
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# Map Skills



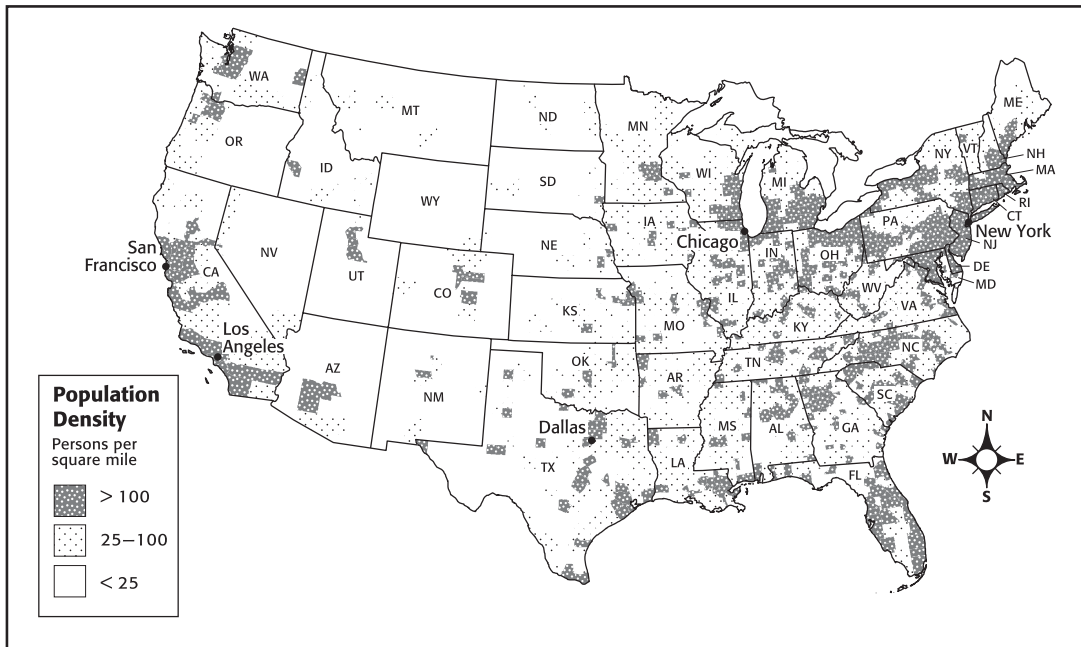
Lake Victoria, shown in the population map above, is the largest lake in Africa and is home to fish called cichlids (pronounced SIK-lids). In the 1950s, a new fish, the Nile Perch, was introduced into Lake Victoria. This map shows the change in the cichlid population since the Nile Perch was introduced.

**Use the map above to answer the questions below.**

- 1. Using a Key** In which year was the number of cichlids the greatest?  
\_\_\_\_\_
- 2. Using a Key** How many years did it take for the cichlid population to decrease by 50 percent?  
\_\_\_\_\_
- 3. Inferring Relationships** Which fish in Lake Victoria do you think is higher on the food chain—the cichlid or the Nile Perch? Explain your answer.  
\_\_\_\_\_
- 4. Identifying Trends** Based on the rate of decrease of cichlids shown on the map, what do you think will happen to the cichlid population by 2050? Explain your answer.  
\_\_\_\_\_



# Map Skills



According to the U.S. Census Bureau, there are currently more than 288 million people living in the United States.

**Use the map above to answer the questions below.**

**1. Using a Key** Which coast of the United States has the larger population?

\_\_\_\_\_

**2. Using a Key** In what area of the United States do the fewest people live?

\_\_\_\_\_

**3. Analyzing Data** Almost 225 soccer fields can fit in one square mile. Approximately how many could you have to yourself if you lived in a region containing 25 people per square mile? Or 100 people per square mile?

\_\_\_\_\_

**4. Inferring Relationships** Why do you think that the population is distributed the way that it is?

\_\_\_\_\_

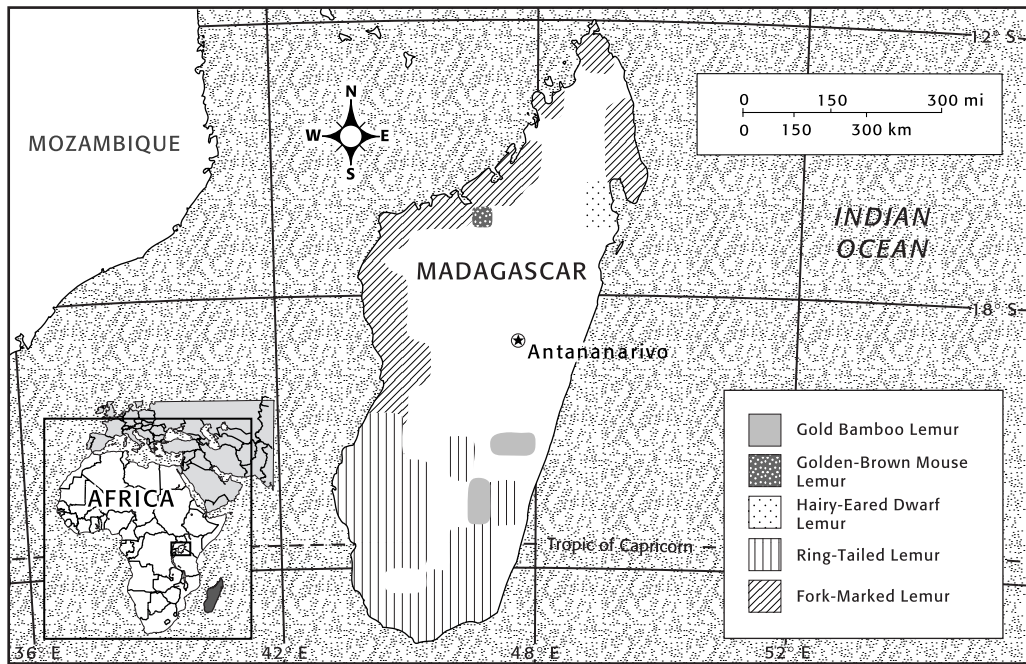
**5. Making Conclusions** Find the general location of your community on the map, if shown. Do you live in an area of high population density or low population density? How could your community's location affect its population density?

\_\_\_\_\_

\_\_\_\_\_

## Skills Worksheet

## BIODIVERSITY HOTSPOTS

**Map Skills**

The island nation of Madagascar is part of one of the world's 25 biodiversity hotspots. A biodiversity hotspot is a region with an especially large number of species. Madagascar is the world's only home of lemurs, a primitive primate. Of the more than 40 species of lemurs, most are either endangered or at some risk of becoming so. This map shows distribution of populations of five lemur species.

**Use the map above to answer the questions below.**

- 1. Using a Key** Which lemur species has the largest population distribution? Which has the smallest?

\_\_\_\_\_

- 2. Using a Key** What is the status of the hairy-eared dwarf lemur?

\_\_\_\_\_

- 3. Analyzing Data** Which two lemur species are found near the distribution area of the ring-tailed lemur?

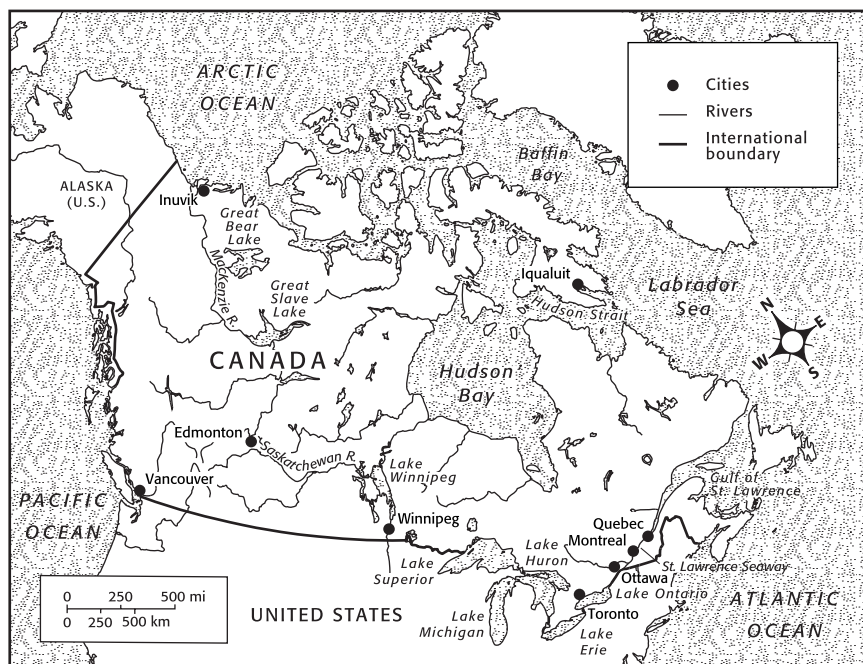
\_\_\_\_\_

- 4. Making Conclusions** The golden bamboo lemur is the most endangered species shown on the map. However, it does not have the smallest distribution. Why do you think this might be?

\_\_\_\_\_

\_\_\_\_\_

# Map Skills

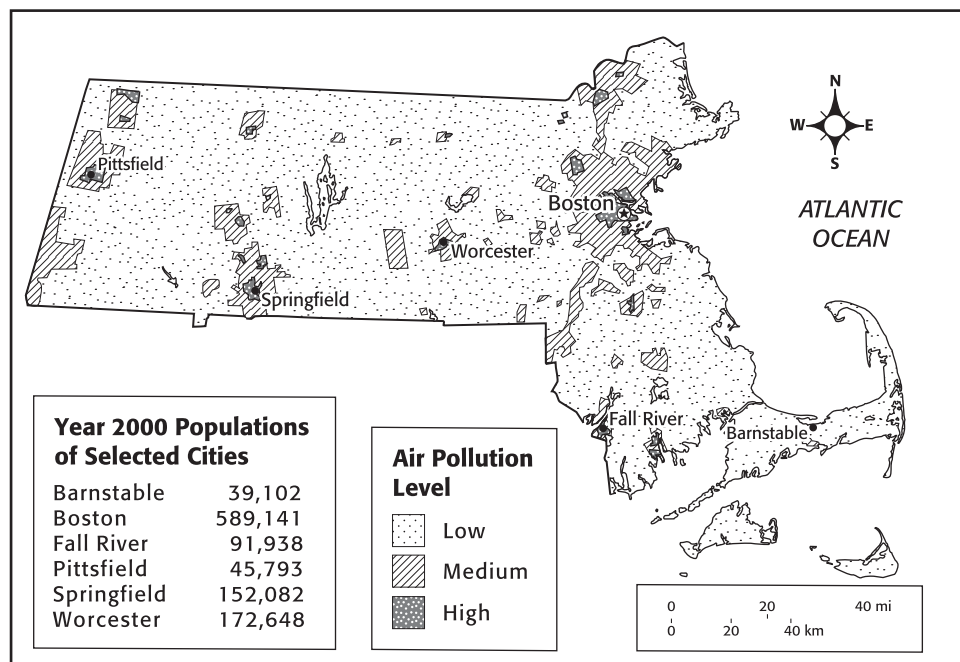


This map shows just a few of the many sources of water in and around Canada. In addition to being necessary for human life, water is also an important means of transportation. Before cars, trains, and airplanes were invented, water provided the fastest way to move people and goods.

Use the map above to answer the questions below.

- 1. Finding Locations** What is the northernmost body of water on the map?  
What city is closest to that body of water?  
\_\_\_\_\_
- 2. Inferring Relationships** Near which body of water in Canada are the most cities located?  
\_\_\_\_\_
- 3. Inferring Relationships** What is similar about the locations of all the cities on the map?  
\_\_\_\_\_
- 4. Making a Hypothesis** Toronto is the most populous city in Canada. What aspects of its location do you think helped its population to grow?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Map Skills

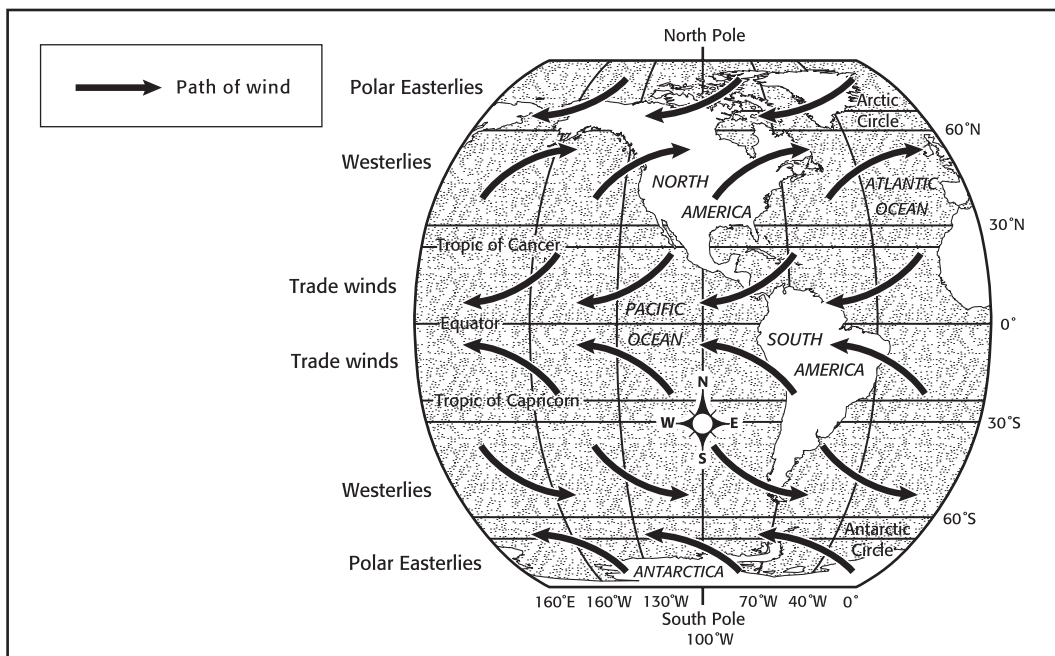


This map shows air pollution in Massachusetts. Air pollution concentrates over populated areas because human activity is its primary cause.

**Use the map above to answer the questions below.**

- 1. Using a Key** What air pollution level is found over most of the state of Massachusetts?  
\_\_\_\_\_
- 2. Finding Locations** Which selected city has the lowest level of air pollution?  
\_\_\_\_\_
- 3. Inferring Relationships** Generally, where are the highest levels of air pollution located?  
\_\_\_\_\_
- 4. Making Conclusions** Explain the relationship between air pollution and human population.  
\_\_\_\_\_  
\_\_\_\_\_
- 5. Making a Hypothesis** What do you think the air pollution level is over your region?  
\_\_\_\_\_

# Map Skills



Wind is caused by changes in atmospheric pressure. Atmospheric pressure, also called barometric pressure, is the force, or pressure, of the air above Earth.

Use the map above to answer the questions below.

**1. Analyzing Data** Which do you think affects wind movement more, latitude or longitude?

\_\_\_\_\_

**2. Finding Locations** If you live in South America at the equator, in which direction does the wind blow?

\_\_\_\_\_

**3. Making a Hypothesis** In which direction do the Westerlies blow? Why do you think they are called the Westerlies?

\_\_\_\_\_

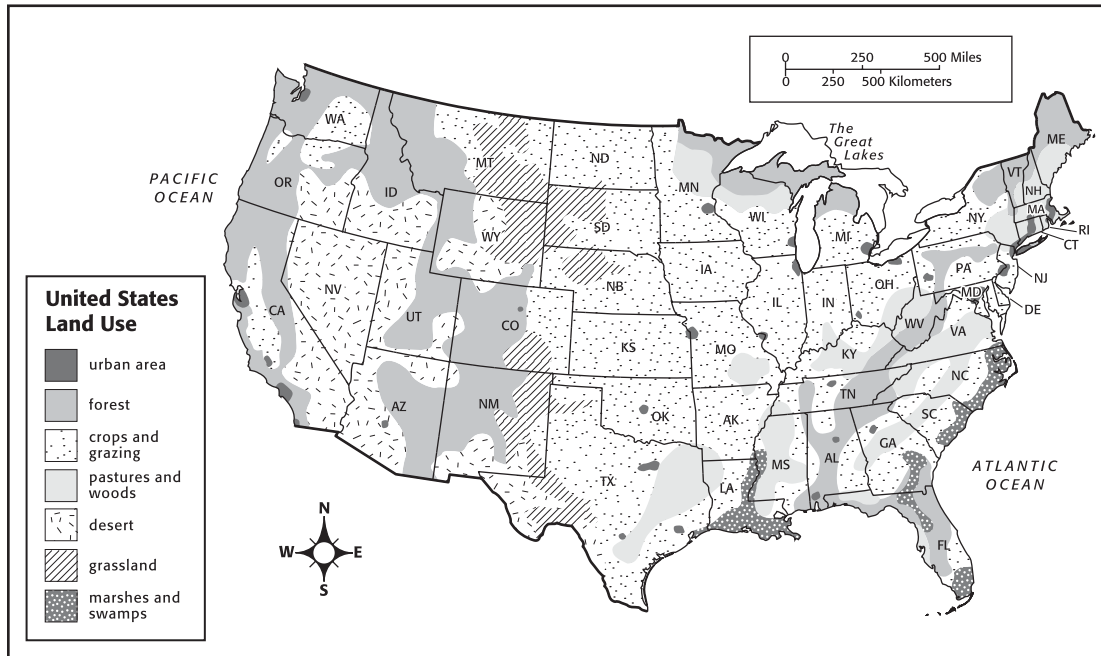
**4. Making a Hypothesis** If you were sailing to North America from Europe, near which line of latitude would you sail? Why?

\_\_\_\_\_

**5. Making Conclusions** Find the general location of your community on the map. If a storm were approaching you, which direction would it be coming from?

\_\_\_\_\_

# Map Skills

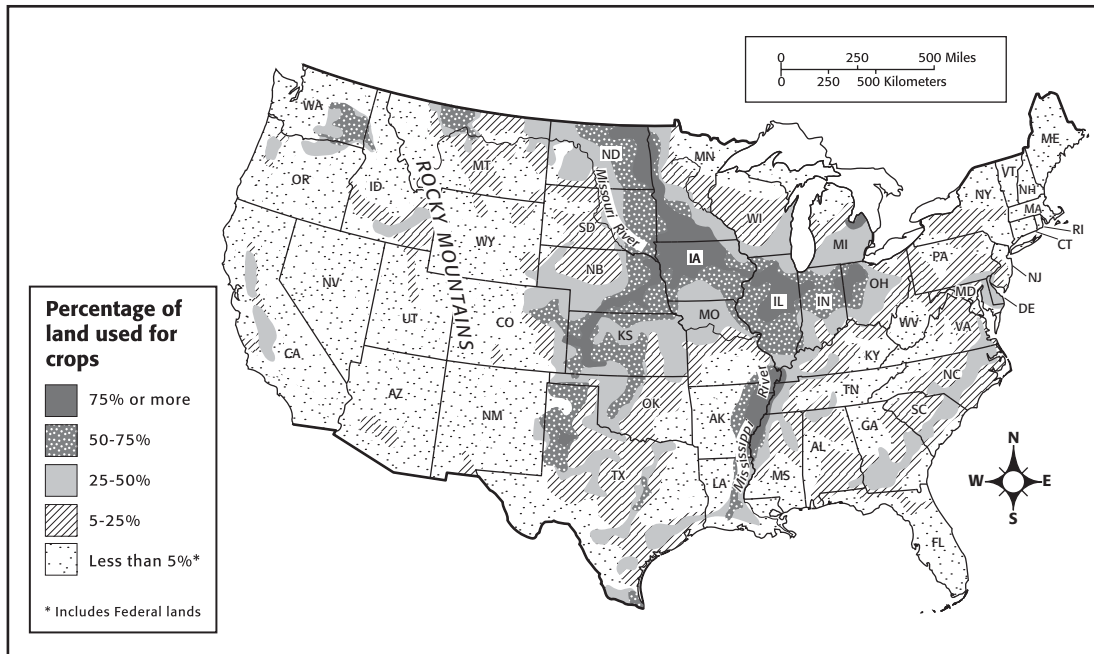


Humans use land to grow food and for living space, among other uses. They change land, too. For example, through irrigation, land that was once unsuitable for growing crops can be farmed. Marshes and swamps may be drained. This map shows land use in the United States.

Use the map above to answer the questions below.

- 1. Using a Key** According to this map, what types of land are used the least?  
\_\_\_\_\_
- 2. Using a Key** What are the most common uses of land in the United States?  
\_\_\_\_\_
- 3. Inferring Relationships** What land-use designations are most likely the result of human manipulation?  
\_\_\_\_\_
- 4. Analyzing Data** What land-use designations do you think the crops and grazing lands might have had before they were farmed?  
\_\_\_\_\_
- 5. Making Conclusions** How might other types of land-use have affected the development of urban areas?  
\_\_\_\_\_  
\_\_\_\_\_

# Map Skills



The United States is a major food-producing nation. In 2001, more than 9.5 billion bushels of corn were grown in the United States. This map shows the percentage of land in each state that is used to grow crops. It does not, however, show how much of each crop is grown.

**Use the map above to answer the questions below.**

**1. Using a Key** Which states use the highest percentage of land for growing crops?

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**2. Finding Locations** Where in the United States are most of the crops grown—the Midwest, the East Coast, or the West Coast?

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**3. Finding Locations** Near which geographic feature are more crops grown—the Rocky Mountains or the Mississippi River?

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**4. Inferring Relationships** In what ways might the locations of rivers and mountains affect the location of agricultural activity?

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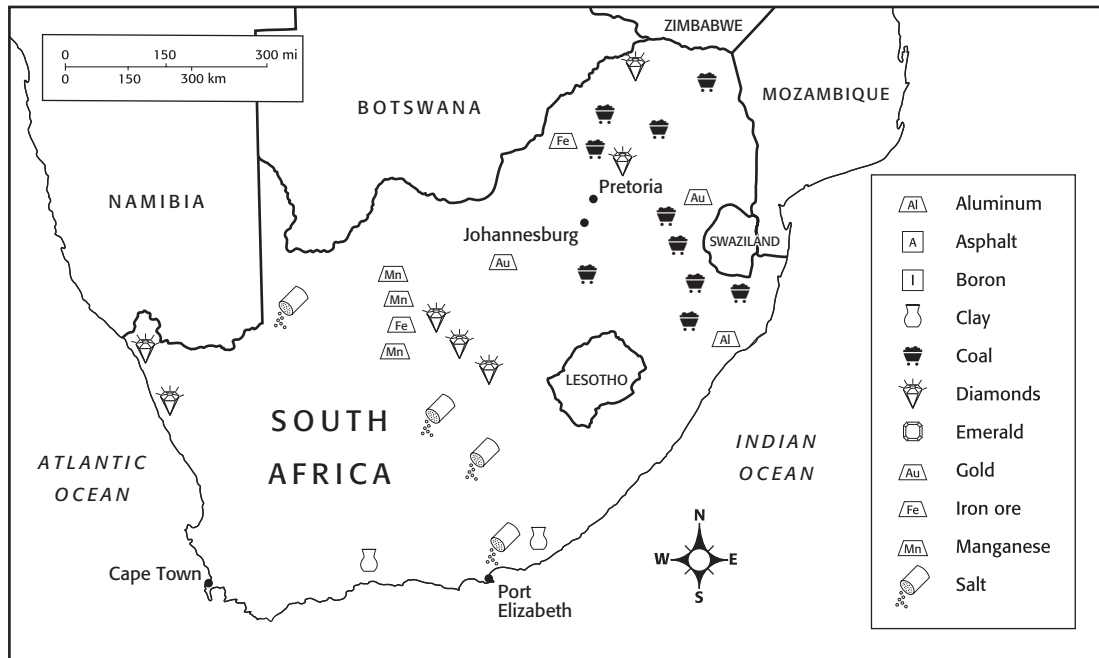
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## Skills Worksheet

## SOUTH AFRICA'S MINERALS

## Map Skills



South Africa is the world's leading producer of diamonds and coal. However, many other minerals, such as emeralds, iron ore, and aluminum, are also mined there.

Use the map above to answer the questions below.

1. **Using a Key** Which mineral is mined in the most locations?

\_\_\_\_\_

2. **Finding Locations** Near which two cities are most mineral deposits located?

\_\_\_\_\_

3. **Inferring Relationships** Are there more mines located near the water or inland?

\_\_\_\_\_

4. **Analyzing Data** Which minerals found in South Africa are metals? Which are precious stones?

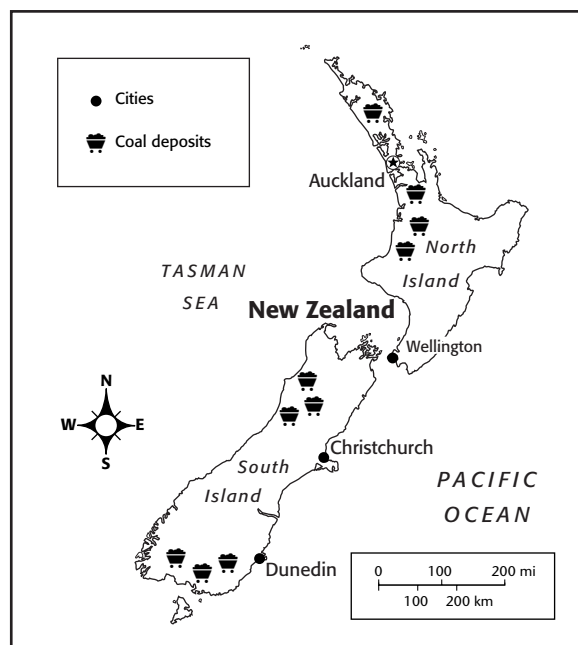
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5. **Analyzing Data** What mineral is found throughout South Africa?

\_\_\_\_\_

# Map Skills



This map shows the location of coal mines in New Zealand. Coal is New Zealand's most common fossil fuel. Although both North and South Island have many coal mines, the mines on South Island are much more productive. South Island mines produce almost 85 percent of New Zealand's coal.

**Use the map above to answer the questions below.**

**1. Using a Key** Which island's coal deposits are distributed over a wider area?

\_\_\_\_\_

**2. Finding Locations** What city is farthest from a coal deposit?

\_\_\_\_\_

**3. Finding Locations** Are most of the coal mines in New Zealand near cities or some distance away?

\_\_\_\_\_

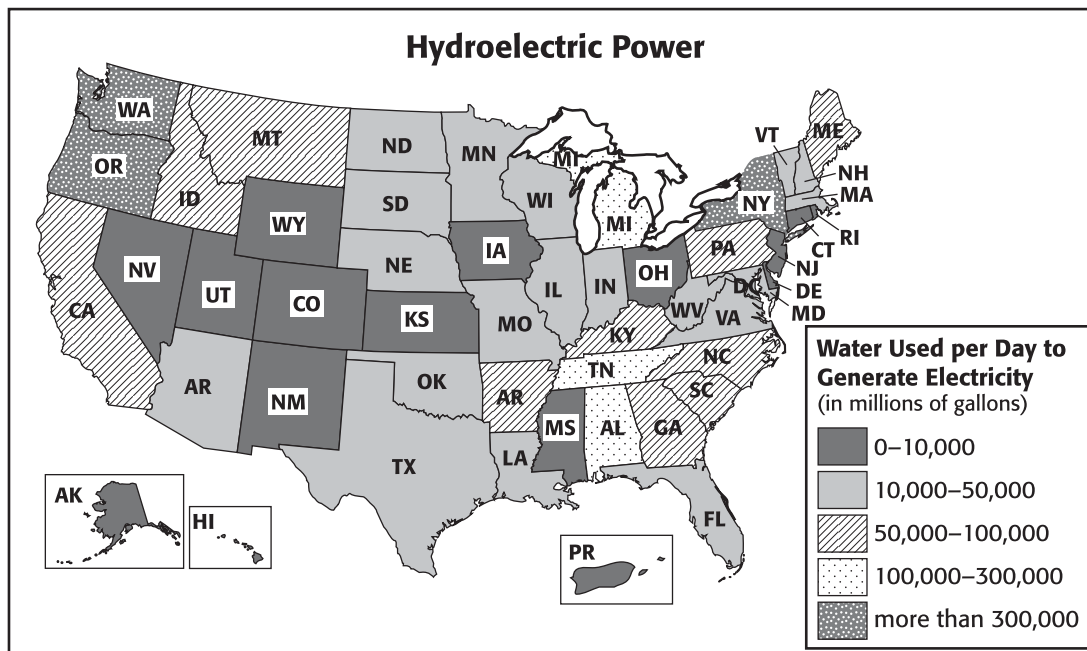
**4. Making a Hypothesis** Based on what you have learned in this chapter, what types of mining do you suppose New Zealanders use to get their coal? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Map Skills



The United States is the third largest producer of hydroelectric power. Only Canada and Brazil use more water for hydroelectricity. Together these three countries make up 37 percent of the world's hydroelectric power generation. This map shows how states compare in their use of water for hydroelectric power.

**Use the map above to answer the questions below.**

**1. Using a Key** What three states use the most water for hydroelectric energy?

\_\_\_\_\_

**2. Analyzing Data** Do the majority of states use more than or less than 100,000 million gallons of water for hydroelectric power per day?

\_\_\_\_\_

**3. Making Conclusions** How much water per day does the state where you live use for hydroelectric power?

\_\_\_\_\_

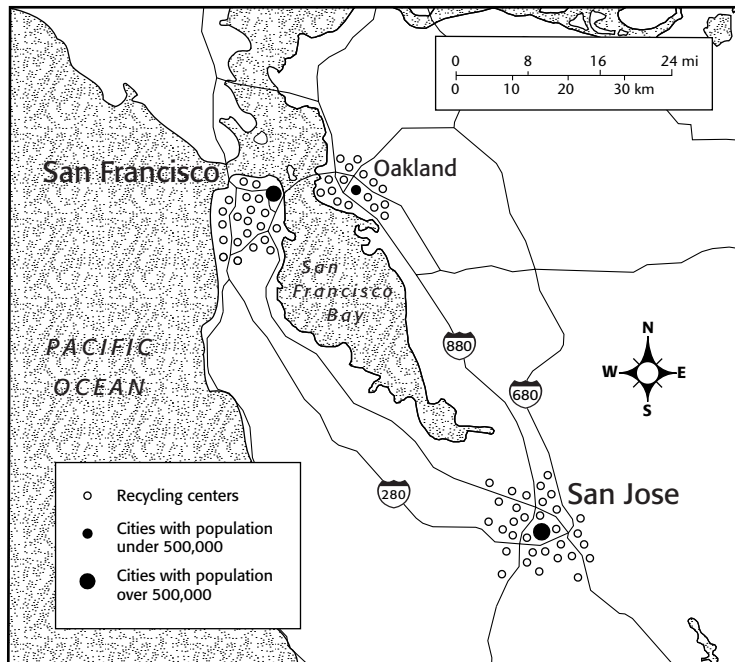
**4. Making Conclusions** Based on what you have learned in this chapter, do you consider it a good thing or a bad thing if a state uses a high amount of hydroelectric power?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Map Skills

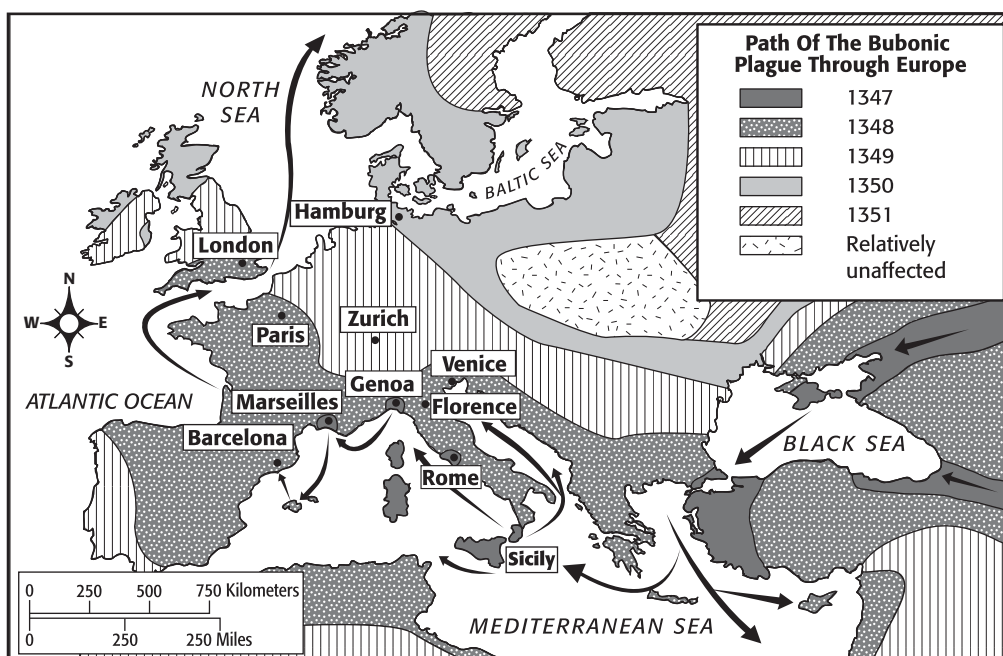


This map of the San Francisco Bay area shows the location of many of its recycling centers. Although many of these centers collect common recyclables, such as glass, plastic, and metal, others recycle clothing or computer parts. The purpose of recycling centers is to collect materials of all kinds for reuse.

Use the map above to answer the questions below.

- 1. Using a Key** How many recycling centers are shown in San Francisco?  
\_\_\_\_\_
- 2. Analyzing Data** If the population of San Francisco is approximately 750,000, how many people are served by each of its recycling centers?  
\_\_\_\_\_
- 3. Finding Locations** How might communities between major cities utilize urban recycling centers? What problems might arise with this solution?  
\_\_\_\_\_  
\_\_\_\_\_
- 4. Inferring Relationships** What relationship can you infer between recycling centers and population?  
\_\_\_\_\_  
\_\_\_\_\_

# Map Skills

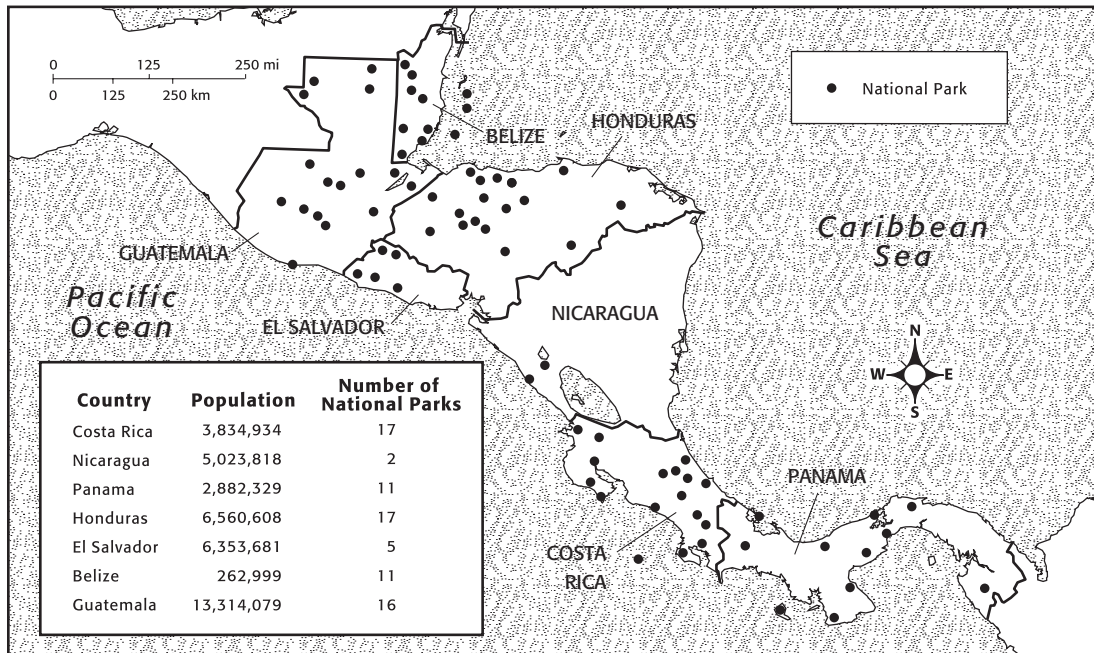


The bubonic plague, also called the Black Death, was brought to Europe along trade routes that ran to and from Asia. Rats on trading ships carried fleas that carried the disease to Europe. Nearly half the population of Europe died from the Black Death in the 1300s.

Use the map above to answer the questions below.

- Using a Key** What were the first areas hit by the plague?  
\_\_\_\_\_
- Analyzing Data** How long did it take for the plague to reach London?  
\_\_\_\_\_
- Analyzing Data** How many years did it take for the plague to spread throughout most of Western Europe?  
\_\_\_\_\_
- Using a Key** About how many miles did the plague spread?  
\_\_\_\_\_
- Making a Hypothesis** Some areas of Europe were unaffected by the plague despite being in its path. What might explain this?  
\_\_\_\_\_  
\_\_\_\_\_

# Map Skills



Every Central American country has created national parks in order to save the remaining rain forest ecosystems. There are 411 protected areas in the region, and 391 more are being planned. Of the areas already protected, 124 are officially national parks.

Use the map above to answer the questions below.

- 1. Analyzing Data** Which country or countries in Central America have the most national parks? the fewest?  
\_\_\_\_\_
- 2. Analyzing Data** How have countries distributed their parks among interior and coastal areas?  
\_\_\_\_\_
- 3. Inferring Relationships** What is the relationship, if any, between the size of a country and the number of national parks?  
\_\_\_\_\_
- 4. Making Conclusions** What factors do you think affect the creation of national parks?  
\_\_\_\_\_
- 5. Making a Hypothesis** How might a significant population increase in Guatemala affect the national parks system?  
\_\_\_\_\_