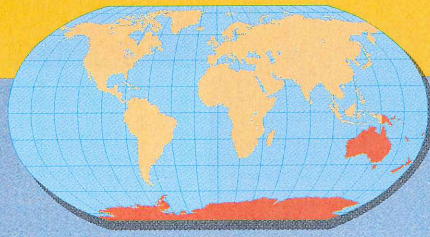


UNIT



11

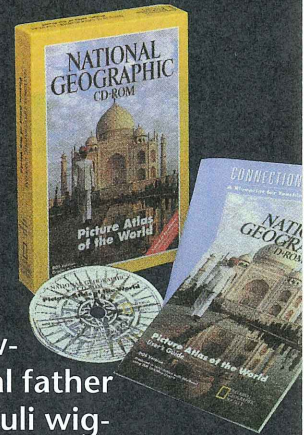
Australia, Oceania, and Antarctica

GeoJournal Activity

Check for travel or other kinds of advertisements on television or in newspapers and magazines. List any that mention the places, people, and cultures of the region. Record your impressions.

Picture Atlas of the World CD-ROM

Many indigenous peoples still live in Oceania. Create a file on these indigenous peoples. (See the *Picture Atlas of the World User's Guide* on how to use the collector button.) Include the video for Australia and the following photographs: Aboriginal father and daughter in Australia; Huli wigmen and pig hunters in Papua New Guinea; Maori boy in New Zealand getting his face painted; fishers and mother in feathers in Vanuatu; dancers and shoppers in Micronesia; stone dancers and ceremonial drinkers in Fiji. Using these various indigenous groups as topics, create electronic reports and present them to the class.



interNET CONNECTION

For more information about Australia, Oceania, and Antarctica visit the National Geographic Society's Web site.

www.nationalgeographic.com

For a unit-based activity visit the Glencoe Social Studies Web site.

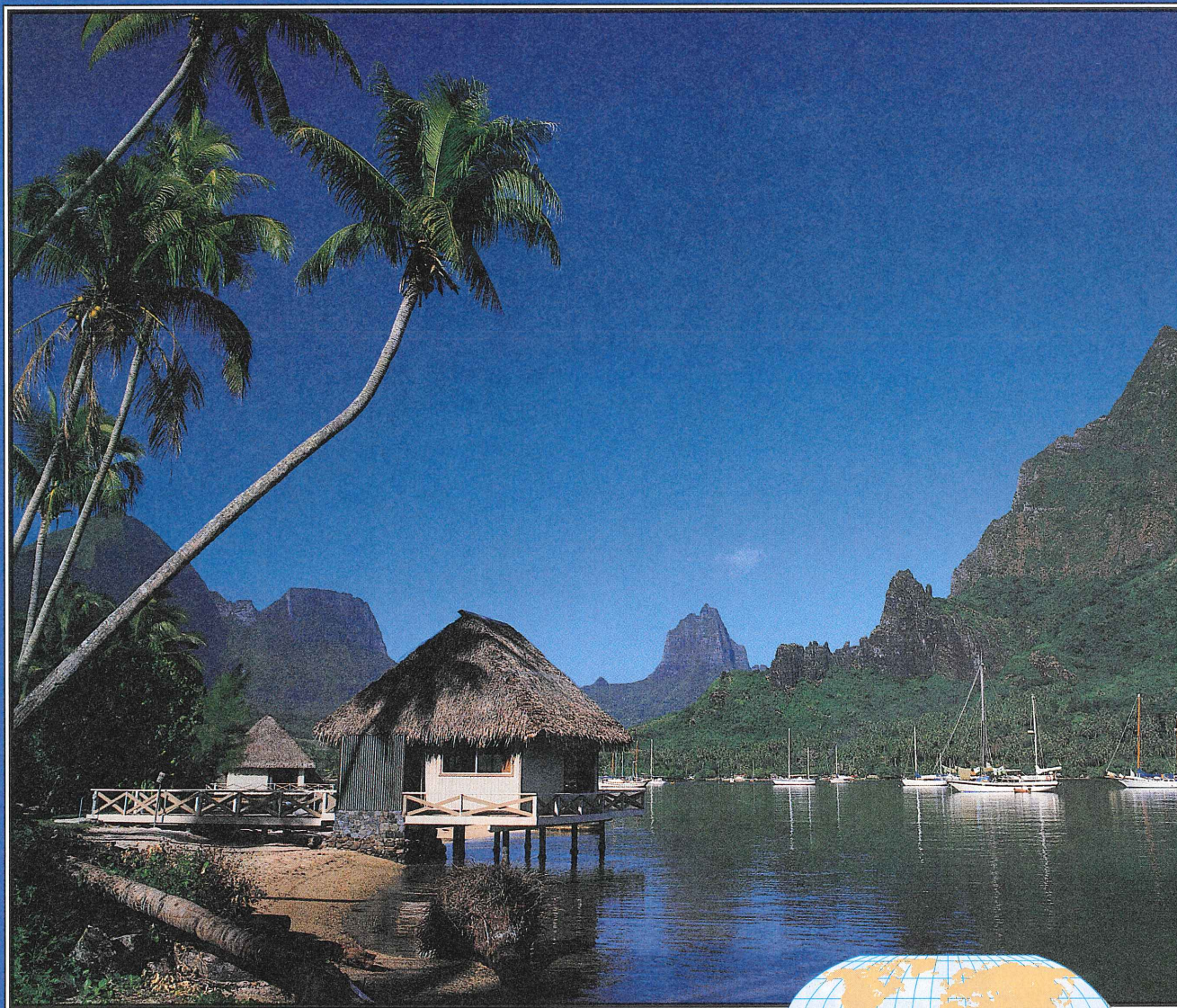
www.glencoe.com



Chinstrap penguins gather on a rare blue iceberg in the southern Scotia Sea, near the South Sandwich Islands.

◀ A boy and a girl feeding a kangaroo in Kangaroo Park, Sydney, Australia.

The Physical Geography of Australia, Oceania, and Antarctica



CHAPTER FOCUS

Geographic Setting

The culture region of Australia, Oceania, and Antarctica contains the two continents of Antarctica and Australia as well as thousands of islands of varying size in the Pacific Ocean.



Geographic Themes

Section 1 The Land

PLACE Australia and Antarctica are mostly flat plateaus at both high and low elevations.

▲ **Photograph:** Harbor in French Polynesia

Section 2 The Climate and Vegetation

LOCATION Winds from the Pacific Ocean bring the island country of New Zealand moist warm air in the winter and cool breezes in the summer.

SETTING THE SCENE

Read to Discover . . .

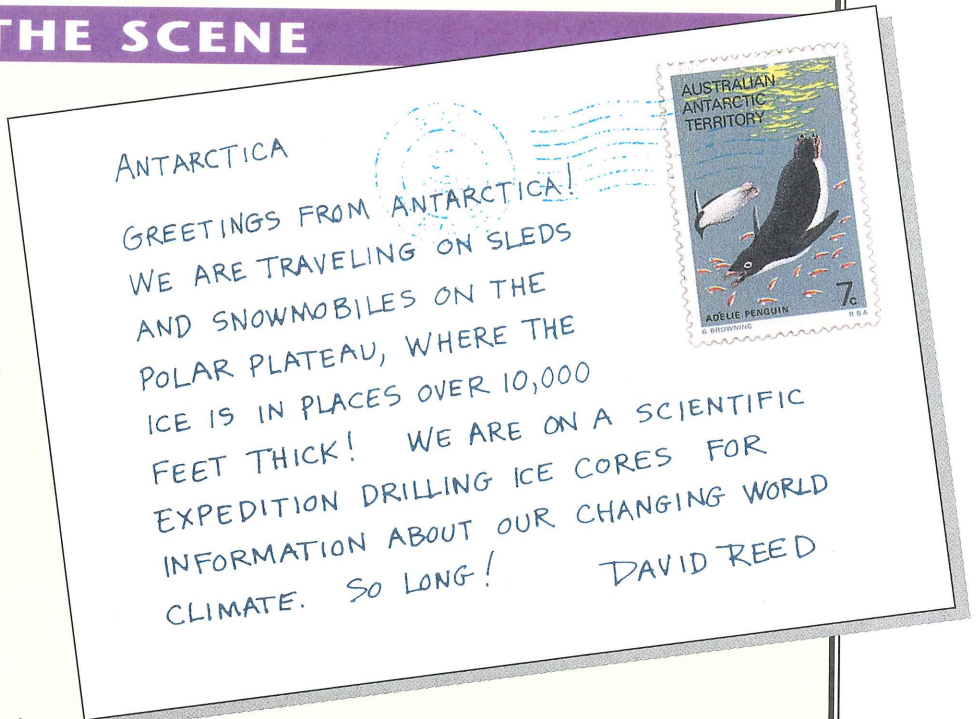
- the mammoth rocks and endless deserts of Australia's interior.
- the volcanic mountains and coral reefs of the Pacific Islands.
- the icy landscape and ice cap climate of Antarctica.

Key Terms

- artesian water
- coral
- atoll
- lagoon
- continental island
- krill

Identify and Locate

Australia, Oceania, New Zealand, Antarctica, Melanesia, Micronesia, Polynesia, Great Dividing Range, Great Barrier Reef, Western Plateau, Murray River, North Island, South Island, Transantarctic Mountains



David Reed carries out scientific work in Antarctica, one of the coldest areas on the earth. Antarctica, along with Australia and the islands of Oceania, is part of the diverse South Pacific culture region. Covering a huge portion of the world, the South Pacific region contains both polar and tropical landscapes.

REGION

Australia: A Continent and a Country

Australia is unique. It is the only place on the earth that is both a country and a continent.

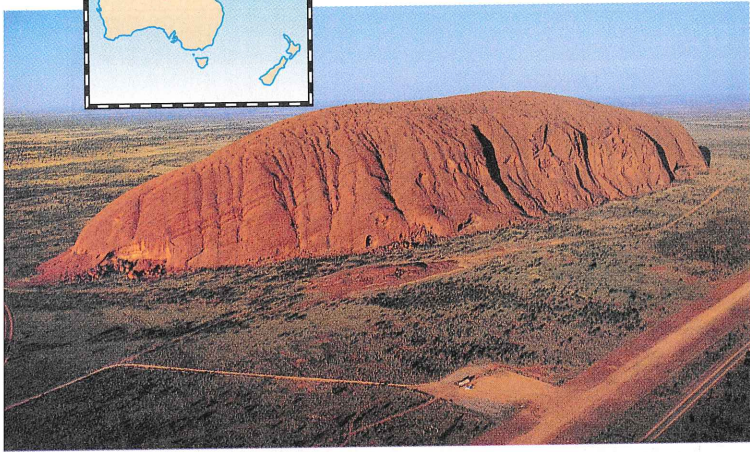
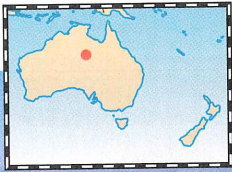
Great Dividing Range

The major area of hills and mountains in Australia is the Great Dividing Range. The range stretches from the northernmost Cape York Peninsula southward along Australia's eastern coast to the island of Tasmania. Most of Australia's freshwater begins in the Great Dividing Range.

Central Lowlands

West of the Great Dividing Range the land takes on a very different appearance. A thick ribbon of pastureland known as the Central Lowlands runs through the middle of Australia. Underneath the lowlands lies a vast pool of underground water known as the Arte-





Geographic Themes



Place: Ayers Rock, Australia

Ayers Rock, a popular tourist attraction, dominates the desert landscape of central Australia. *How much of Australia's land is arable?*

PLACE

New Zealand: A Rugged Landscape

Located 1,200 miles (1,931 km) southeast of Australia, New Zealand is a group of mountainous islands. Two islands—North Is-

land and South Island—form most of the country's landmass.

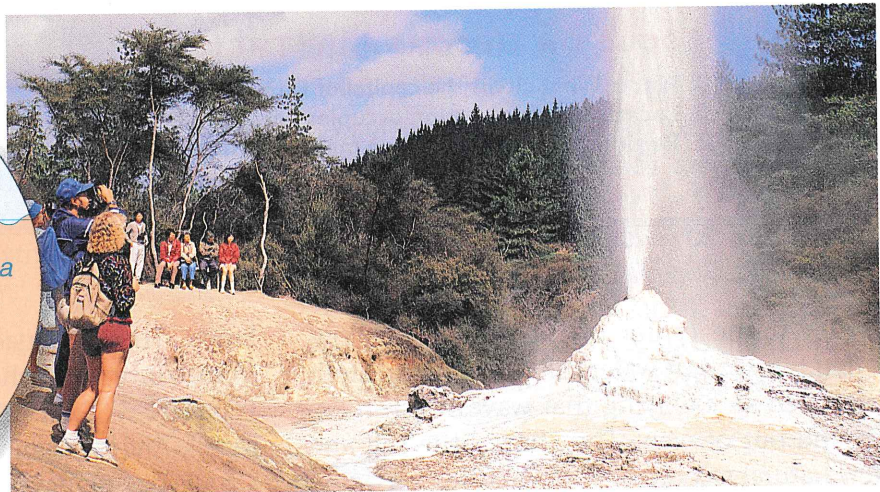
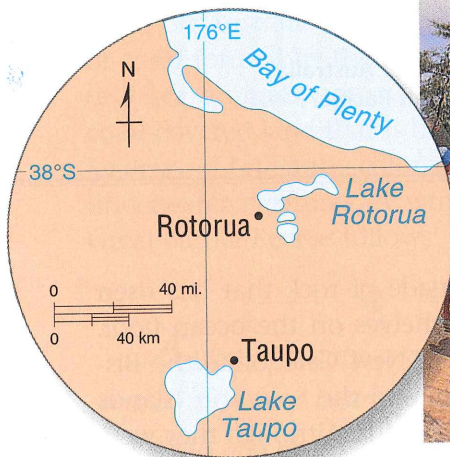
North Island has at its center a plateau of volcanic stone crossed by a chain of volcanic peaks, many of which are active. Sparkling freshwater lakes, including Lake Taupo, New Zealand's largest lake, are common in this part of the island as well. To the east of the plateau, running north and south along the island, is a band of hills, their slopes dotted with sheep and dairy cattle.

Longer than North Island, South Island is dominated by the towering Southern Alps. Beyond, along the South Island's jagged western coastline, are numerous finger-like inlets formed centuries ago by glaciers.

Natural Resources

Fast-flowing rivers on both North and South Island provide the people of New Zealand with an abundant supply of hydroelectric power. Another energy source is steam from volcanic hot water, which is used to generate geothermal power. New Zealand also has coal and natural gas.

Like Australia, New Zealand is a global supplier of sheep and wool products. Pine forests and Pacific Ocean fish are other important resources.



Geographic Themes



Human/Environment Interaction: North Island, New Zealand

The central plateau of New Zealand's North Island contains volcanoes, hot springs, and geysers. *How have the hot springs benefited New Zealanders?*





Geographic Themes

Region: Antarctica

Animals, such as penguins, seals, and whales, thrive in Antarctica's coastal waters. *What Antarctic shellfish may one day help feed the world's hungry?*

PLACE

Antarctica: A White Plateau

Nearly twice the size of Australia, Antarctica sits astride the southern end of the globe under an enormous white shield. The ice, which is as much as 2 miles (3.2 km) thick in some places, covers about 95 percent of the continent's landmass.

Landforms

The Transantarctic Mountains cross the continent and extend northward on the Antarctic Peninsula to within 600 miles (965 km) of South America's Cape Horn. The mountains and the peninsula divide the continent into two regions. To the east is a high, flat plateau. To the west of the mountains, the landmass is largely below sea level.

Although significant mineral resources are present in Antarctica, its greatest resources are the scientists who conduct research there. They research weather patterns and observe the sun and stars without obstruction. They also have observed—more clearly in Antarci-

ca than in other parts of the world—the effect of human industrialization on the earth's ozone layer. The waters around Antarctica also contain a wealth of sea resources, such as **krill**, a shrimplike animal that may one day help feed the world's hungry.

SECTION 1 ASSESSMENT

Checking for Understanding

- 1. Define** artesian water, coral, atoll, lagoon, continental island, krill.
- 2. Locating Places** What continents are located in the South Pacific region?
- 3. Human/Environment Interaction** What local resources help to meet New Zealand's energy needs?
- 4. Place** Where in the South Pacific are plateaus found?

Critical Thinking

- 5. Determining Cause and Effect** Why is most of Antarctica's landmass below sea level?



The Climate and Vegetation

SETTING THE SCENE

Read to Discover . . .

- the climate regions of Australia, Oceania, and Antarctica.
- the vegetation patterns of Australia, Oceania, and Antarctica.

Key Terms

- wattle
- doldrums
- typhoon
- manuka
- crevasse
- lichens

Identify and Locate

Climate regions: desert, steppe, tropical rain forest, marine west coast, ice cap, tundra

In the South Pacific, water is crucial in creating great contrasts in climate and vegetation. Pacific Ocean currents bring moisture to many islands in Oceania, where lush landscapes prevail. In arid areas, such as Australia's Western Plateau, the land is dry and barren.

REGION

Australia's Climate and Vegetation


Australia is one of the driest continents in the world. The driest area of Australia is the Western Plateau.

Desert


Subtropical high-pressure air masses above central Australia block moisture-bearing Pacific Ocean winds from reaching the Western Plateau. This geographic factor contributes to a desert climate on large areas of the continent.

Steppe

Surrounding Australia's desert region is a ring of steppe climate. Here the landscape changes as more regular rainfall brings vegetation to life. Rains, however, fall only during the wet season. A woman who grew up in southwestern Australia describes the effects of the rains on the steppe landscape:

— — — — —  — — — — —

The transformation of the countryside was magical. As far as the eye could see wild flowers exploded into bloom. Each breeze would waft [the flowers'] pollen round the house, making it seem as though we lived in an enormous garden. . . . Trees sprung up . . . and before long a new clump of . . . saplings was well formed. On walks we would find enormous mushrooms, as large as a dinner plate, but perfectly formed . . . Stranger still, the whole countryside was green, a color we scarcely knew.

— — — — —  — — — — —

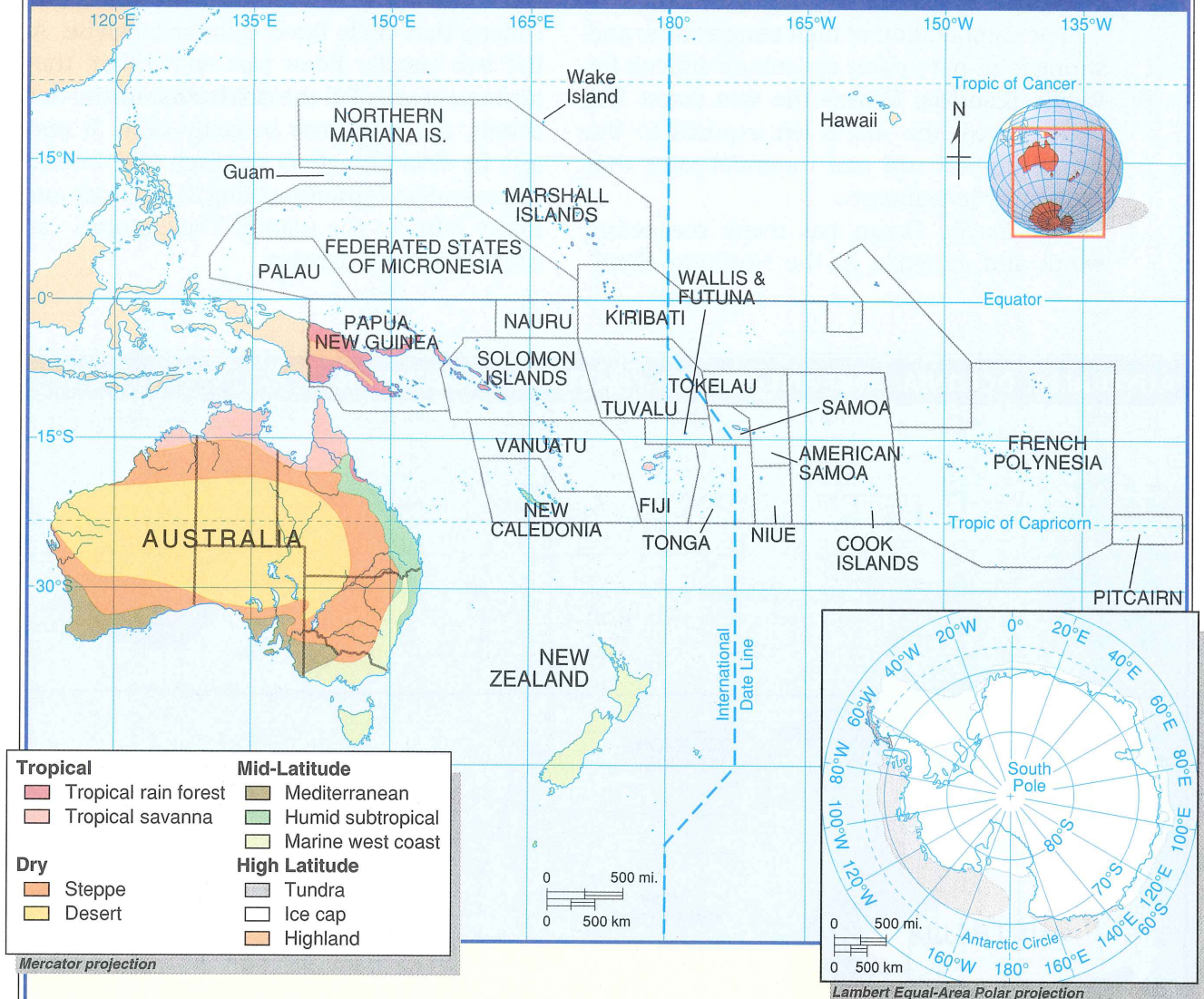
Two native forms of vegetation—acacia and eucalyptus trees—dominate the landscape of the steppe climate region. Early settlers who wattled, or interwove, acacia saplings to create walls and roofs for their homes named the trees **wattles**.

Coasts

Australia's coastal areas have a variety of moister climates. The southern coasts have a Mediterranean climate, while a humid subtropical climate dominates the northeast coast, and a marine west coast climate prevails on the southeastern coast.



AUSTRALIA, OCEANIA, AND ANTARCTICA: CLIMATE REGIONS



FOCUS ON GEOGRAPHIC THEMES



- 1. Region:** What climate region extends through most of central Australia?
- 2. Location:** Where are tropical climate regions located in Australia?
- 3. Place:** What is the predominant climate region of Antarctica?
- 4. Place:** How might climate affect settlement patterns in Australia?

REGION

Oceania's Climate and Vegetation

Oceania lies primarily north of the Tropic of Capricorn. It generally has a tropical rain forest climate, in which warm days follow one another in an almost unbroken chain. Most of the region has distinct wet and dry seasons. During the wet season, days are con-

stantly rainy and humid. In the dry season, rainfall decreases, and a brilliant blue sky and ocean blend into one at the endless horizon.

The amount of rain that falls during the wet season varies from island to island. On some of the low coral islands, very little rain falls, and there is little or no vegetation. Tropical plants such as coconut palms cover islands that receive more rain.

The mountainous high islands receive the most rainfall—as much as 150 inches (381

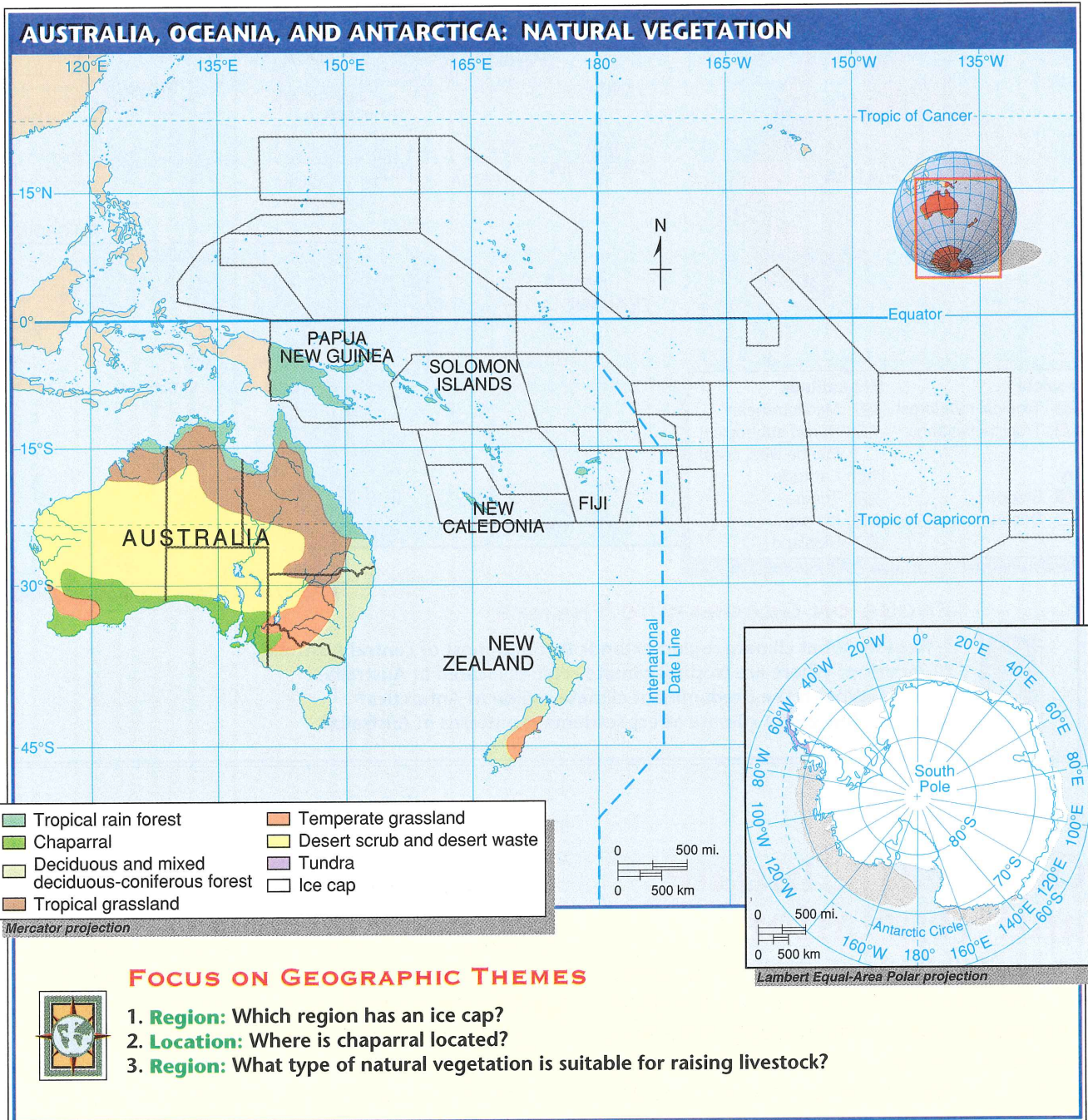


cm) a year in western Melanesia. On these islands, steamy rain forests cover the land.

The combination of high temperatures and strong rains have made agriculture difficult for Pacific islanders. Where the rain forest has been cleared, the soil is left exposed to the strong tropical sun and torrential rains that wash away its nutrients.

The Pacific Ocean has many competing winds and currents. In the Northern Hemisphere,

the Pacific's currents flow in an enormous clockwise circle. In the Southern Hemisphere, that circle flows counterclockwise. As the two circular flows pass each other, they form an area called the **doldrums**. In the doldrums, the wind may be eerily calm. It may also be devastatingly fierce. Each year intense storms called **typhoons** bring high winds and heavy rains to the islands. These storms can cause enormous damage.



PLACE

New Zealand's Climate and Vegetation

With the exception of its mountain areas, New Zealand has only one climate region—marine west coast. Rain falls throughout the year and temperatures are mild.

The central volcanic plateau of the North Island and the Southern Alps on the South Island strongly affect New Zealand's climate. Atop the plateau it is warm and sunny in summer. Small shrubs called **manuka** carpet the region, replacing forest that prehistoric eruptions destroyed long ago. Throughout both islands, it is wettest on the western slopes of the mountains. Here, the air coming off the Pacific Ocean drops its moisture.

REGION

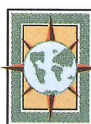
Antarctica's Climate and Vegetation

Antarctica is one of the coldest places on the earth. It is also one of the highest and driest of the continents.

Antarctica's plateau, covered year-round by a vast sheet of ice, is drier than Australia's deserts. As the air rises across the plateau, moisture is lost. This dryness in turn makes the air colder. During the long winter, temperatures may fall as low as -100°F (-73°C).

Antarctica's ice is always moving, inching slowly toward the ocean. In the warmer, moister parts of the continent, it moves more quickly, often breaking into pieces. Between the pieces huge cracks called **crevasses** develop.

A small area of Antarctica lies in a tundra climate zone. In this zone, located on the Antarctic Peninsula, summer temperatures may reach almost 60°F (15.6°C). Here, a surprising array of vegetation breaks the endless white of the continent's interior. Mosses dot the rocks, algae tints the ice itself with red, green, or yellow. Sturdy plants called **lichens** flourish.



Geographic Themes

Place: Australian Outback

Part of Australia's interior consists of open countryside and has a steppe climate. *What two native forms of vegetation are found in Australia's steppe climate region?*

SECTION 2 ASSESSMENT

Checking for Understanding

- 1. Define** wattle, doldrums, typhoon, manuka, crevasse, lichens.
- 2. Locating Places** What areas in the South Pacific and Antarctica have the wettest climates? The driest climates?
- 3. Region** In which climate region is the Antarctic Peninsula located?
- 4. Movement** How do Pacific Ocean currents and winds affect the climate of Oceania?

Critical Thinking

- 5. Making Comparisons** How does the general climate of New Zealand compare with that of Australia?



MAP & GRAPH SKILLS

Interpreting Routes on a Map

Throughout history, merchants have followed trade routes across land and sea. To aid navigation, traders have developed maps of these routes. Since traders usually find the shortest or easiest paths between cities, trade route maps reveal the interaction of human activity with natural landscape.

REVIEWING THE SKILL

Trade routes usually follow the least difficult path between population centers. Because of geography, though, the least difficult route may not be the shortest. When interpreting routes on a map, apply the following steps:

- Identify the map area and symbols used.
- Locate major population centers.
- Identify the trade routes on the map and points of connection between routes.
- Draw conclusions about how the physical geography affects transportation and trade in the region.

1. What modes of transportation does Australia have?
2. What color represents inland waterways?
3. Where are major airports located?
4. Why do you think there are so many routes in eastern Australia?
5. What are the major seaports of Australia?

For additional practice in interpreting routes on a map, see **Practicing Skills** on page 666 of the **Chapter 32 Assessment**.

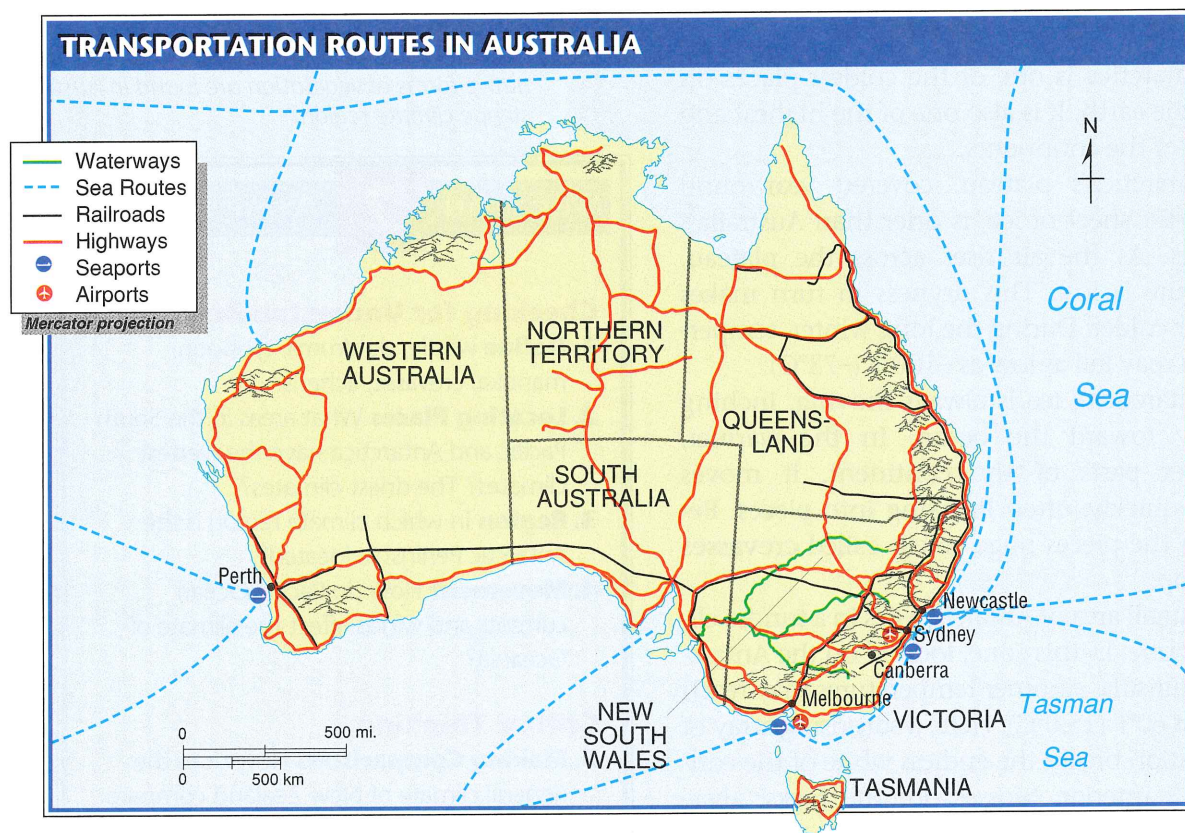
PRACTICING THE SKILL



Study the map below and then answer the following questions.



The **Glencoe Skillbuilder Interactive Workbook, Level 2** provides instruction and practice in key social studies skills.



1

SECTION

The Land

KEY TERMS

SUMMARY



Penguins along the Antarctic coast

artesian water (p. 656)
 coral (p. 656)
 atoll (p. 657)
 lagoon (p. 657)
 continental island (p. 657)
 krill (p. 659)

- The South Pacific region includes the large continents of Antarctica and Australia, and thousands of islands of varying size that comprise Oceania.
- The islands of Oceania were created either directly or indirectly by volcanic activity.
- New Zealand has a rugged geography with very jagged coastlines, tall mountains, and rapidly flowing rivers.
- While Antarctica may have important mineral resources, its key resource is the information it offers to scientists.

2

SECTION

The Climate and Vegetation

KEY TERMS

SUMMARY



The Australian outback, an area of vast expanses

wattle (p. 660)
 doldrums (p. 662)
 typhoon (p. 662)
 manuka (p. 663)
 crevasse (p. 663)
 lichens (p. 663)

- Australia generally has a hot, dry climate. Its interior is a vast desert bordered by a wide steppe. Mountains separate the moister coastal areas from the drier interior.
- A tropical rain forest climate is found throughout much of Oceania.
- Because of Pacific Ocean currents and winds that collide with one another, Oceania experiences violent typhoons at certain times of the year.
- New Zealand has a mild, moist marine climate with a moderate range of temperatures throughout the year, especially on North Island.
- An ice cap climate covers nearly all of Antarctica. Except for lichens and mosses in the tundra areas, Antarctica has no vegetation.



Reviewing Key Terms

Choose the vocabulary term that best completes each of the sentences below. Write your answers on a separate sheet of paper.

- artesian water (p. 656)
- atoll (p. 657)
- lagoon (p. 657)
- continental islands (p. 657)
- doldrums (p. 662)
- typhoons (p. 662)
- manuka (p. 663)
- crevasses (p. 663)
- lichens (p. 663)

SECTION 1

1. In Australia's Central Lowlands, _____ rises to the ground's surface without pumping.
2. The ring of land that forms around a sunken volcano is called an _____. A _____ of warm water is created inside the ring.
3. _____ form when portions of an ocean shelf are pushed upward.

SECTION 2

4. Unstable winds in the _____ of the Pacific Ocean cause violent storms called _____.
5. Explorers in Antarctica must be careful to avoid _____.
6. Where volcanic activity has destroyed New Zealand's trees, _____ shrubs flourish.
7. Hardy plants called _____ grow inside the rocks of Antarctica's coast.

Reviewing Facts

SECTION 1

8. Why are Australia's highlands called the Great Dividing Range?
9. How were the low islands of Oceania formed?
10. Which mountains cross the continent of Antarctica?

SECTION 2

11. What kind of climate is found on New Zealand's North Island?

12. What is Antarctica's greatest resource?
13. Where in Oceania can you find volcanoes?

Critical Thinking

14. **Drawing Conclusions** Most Australians live along the continent's coast. How might physical geography have determined this pattern of settlement?
15. **Making Generalizations** What geographic factors are responsible for Antarctica's cold, dry climate?



Geographic Themes

16. **Region** What landforms dominate the South Pacific region?
17. **Human/Environment Interaction** How has clearing the rain forests affected agriculture in the Pacific islands?



Practicing Skills

Interpreting Routes on a Map

Refer to the Interpreting Routes on a Map skills feature on page 664.

18. Why do you think there is so little transportation in west central Australia?
19. What kinds of transportation are found in the area around Perth?
20. Which seaport appears to have the most traffic? Why?

Using the Unit Atlas

Refer to the physical geography section of the Unit Atlas on pages 650–651.

21. Why is Australia classified as a continent?
22. What is the world's coldest and iciest region?

Projects

Individual Activity

Volcanic activity formed many islands of Oceania. Choose one island from each of the three types of islands—high, low, and continental. Research the geographic and natural history of each kind of island and summarize your findings in a brief oral report.

Cooperative Learning Activity

Working in pairs, create a visual presentation capturing the climate and vegetation of either Australia, New Zealand, Antarctica, or Oceania. Select photographs, maps, drawings, and paintings. Exchange the images and write captions to accompany the images you have received. Work together to organize your material in a booklet for presentation to the class.

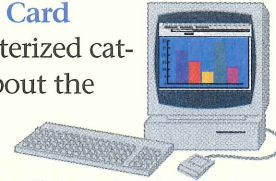
Writing About Geography

Proposal Imagine you live somewhere in Australia, Oceania, or Antarctica. Write a proposal explaining why your area should be used to relieve world overpopulation. Describe the land and climate of your area, and discuss the conditions new residents would find. Use your text and other resources.

Technology Activity

Using a Computerized Card

Catalog Use a computerized catalog to locate sources about the Great Barrier Reef off Australia's northeastern coast. Write an essay describing the formation of the reef, its animal life, and environmental threats it faces.



Locating Places

**PHYSICAL GEOGRAPHY:
AUSTRALIA AND NEW ZEALAND**

Match the letters on the map with the places and physical features of Australia and New Zealand. Write your answers on a separate sheet of paper.

1. Great Barrier Reef
2. Great Victoria Desert
3. Great Dividing Range
4. Tasmania
5. Cape York Peninsula
6. Great Australian Bight
7. Lake Eyre
8. North Island
9. South Island

