

CHAPTER 29  STUDY GUIDE**ORIGIN AND DISTRIBUTION  
OF COMMUNITIES**

## Section 29.1 Ecological Succession

*In your textbook, read about succession and its causes.*

For each statement below, write true or false.

- \_\_\_\_\_ 1. Different stages of succession have different dominant plant species.
- \_\_\_\_\_ 2. Mosses and grasses dominate at the same time as trees do.
- \_\_\_\_\_ 3. Plants that appear early in a succession produce spores or seeds that are dispersed easily.
- \_\_\_\_\_ 4. Plants with short growth periods tend to appear after those with long life cycles.

*In your textbook, read about primary succession.*

5. Order the stages in the primary succession in a natural forest community in New England from earliest (1) to latest (6).

- \_\_\_ Pine trees begin to grow in direct sunlight.
- \_\_\_ Ferns, grasses, and shrubs appear.
- \_\_\_ Primitive soil forms as decomposers break down dead pioneer organisms.
- \_\_\_ Mosses anchor in the soil.
- \_\_\_ Beeches and maples become the dominant species.
- \_\_\_ Organisms such as lichens begin to grow on bare rock.

*In your textbook, read about the climax community.*

**Complete each statement.**

6. In the mature New England forest, the dominant species are \_\_\_\_\_ and \_\_\_\_\_.
7. The final stage in the development of a community is called the \_\_\_\_\_.
8. In the southeastern United States, the final stage of a natural forest community might be a(n) \_\_\_\_\_ forest.

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### Section 29.1 Ecological Succession continued

*In your textbook, read about succession from pond to forest.*

Use each of the terms below just once to complete the passage:

sphagnum	insectivorous	green algae	trees
climax community	blue-green bacteria	ecosystem	

A pond is a(n) (9) \_\_\_\_\_ . The main producers in a pond are (10) \_\_\_\_\_ and (11) \_\_\_\_\_. Although organized, a pond is not a(n) (12) \_\_\_\_\_. Some of the plants growing in the shallows along the shoreline of a pond include (13) \_\_\_\_\_ moss and (14) \_\_\_\_\_ plants. In the areas along the old shore of a pond, the final, dominant plant species are (15) \_\_\_\_\_.

*In your textbook, read about secondary succession.*

For each answer below, write an appropriate question.

16. Answer: It begins when the dominant plants of a plant community are removed, and the land is left untended.  
Question: \_\_\_\_\_
17. Answer: It is possible because soil is already formed and life forms such as seeds are present.  
Question: \_\_\_\_\_
18. Answer: In general, it is more stable and productive than previous stages of the succession that produced it.  
Question: \_\_\_\_\_
19. Answer: The first plants to spring up are almost always of the same species that were destroyed.  
Question: \_\_\_\_\_

*In your textbook, read about trends in succession.*

20. List the characteristics of a succession.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

# ORIGIN AND DISTRIBUTION OF COMMUNITIES

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## Section 29.2 Biomes

*In your textbook, read about climate.*

**Complete each statement.**

1. Climatic factors such as rainfall, humidity, and temperature are determined by altitude, latitude, \_\_\_\_\_ and \_\_\_\_\_.
2. The sun's heat not only provides the light energy for photosynthesis, but also provides \_\_\_\_\_ suitable for life.
3. The sunlight that hits areas at higher latitudes is spread over a wider area than is sunlight that hits near the equator because of \_\_\_\_\_.
4. The sun is five times stronger at the \_\_\_\_\_ than at the \_\_\_\_\_.
5. After the cooled air that rises from the tropics loses its moisture, it spreads to latitudes \_\_\_\_\_ before descending.
6. \_\_\_\_\_ form on the leeward side of mountains as dry air descends.
7. Two important factors that affect precipitation patterns are \_\_\_\_\_ and \_\_\_\_\_.

*In your textbook, read about the tundra and the taiga.*

**For each statement listed below, write tundra or taiga to identify the biome.**

- \_\_\_\_\_ 8. Its annual precipitation in some areas is from 35 to 40 cm.
- \_\_\_\_\_ 9. Unbroken daylight in summer allows nonstop feeding.
- \_\_\_\_\_ 10. Coniferous trees are a prominent form of plant life.
- \_\_\_\_\_ 11. Plant life is restricted mainly to lichens, mosses, and low shrubs.
- \_\_\_\_\_ 12. Warmer temperatures prevent the formation of permafrost.
- \_\_\_\_\_ 13. The soil is wet and acidic.
- \_\_\_\_\_ 14. It is probably the largest of the world's biomes.
- \_\_\_\_\_ 15. Polar bears live in this biome.

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## Section 29.2 Biomes continued

*In your textbook, read about the temperate forest and the tropical rain forest.*

**Complete the table below. For each characteristic, write a brief description for each kind of forest.**

	Characteristic	Temperate Forest	Tropical Rain Forest
16.	Rainfall		
17.	Temperature		
18.	Dominant Species		
19.	Vegetation		
20.	Soil		
21.	Animal Life		

*In your textbook, read about grassland and desert.*

**Answer the following questions.**

22. What are the major species of a climax community that gets 25–75 cm of annual rainfall?

\_\_\_\_\_

23. Where is grassland found in the United States? \_\_\_\_\_

24. What is the yearly amount of precipitation of desert biomes? \_\_\_\_\_

25. Why do plants in the desert grow far apart? \_\_\_\_\_

26. For how long a period of time can the seeds of some desert plants remain dormant?

\_\_\_\_\_

27. In what part of a cactus is photosynthesis carried out?

\_\_\_\_\_

28. Of what advantage to desert plants is a large, shallow root system?

\_\_\_\_\_

## ORIGIN AND DISTRIBUTION OF COMMUNITIES

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### Section 29.2 Biomes continued

*In your textbook, read about the ocean and unique ocean communities.*

**Complete each statement.**

29. Distribution of organisms in the oceans depends mostly on \_\_\_\_\_, the most important of which is \_\_\_\_\_.
30. The average depth of the oceans is \_\_\_\_\_.
31. The three major groups of aquatic organisms are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
32. Large geographic regions of land are called \_\_\_\_\_; in the ocean, such regions are called \_\_\_\_\_.
33. The area of the ocean above the continental shelf is referred to as the \_\_\_\_\_; the deeper waters form the \_\_\_\_\_.
34. The portion of the neritic zone that is closest to the shore, the \_\_\_\_\_, is the region most subject to change.
35. Decomposed materials from the ocean floor are made available to producers at the surface as a result of two factors: \_\_\_\_\_, which create vertical water currents, and \_\_\_\_\_, which creates horizontal water currents.
36. In the deeper waters of the ocean, the absence of \_\_\_\_\_ makes it impossible for \_\_\_\_\_ to take place.
37. Unique animal communities live on the ocean floor at depths as great as \_\_\_\_\_. The first such community was found in 1977 off the \_\_\_\_\_.
38. Ocean floor communities use \_\_\_\_\_ energy.
39. Although the temperature on most of the ocean's floor is near freezing, in some areas of the Pacific the water issuing from deep-sea vents may be as hot as \_\_\_\_\_.
40. The strangest of the animals living near the deep-sea vents are the giant \_\_\_\_\_, some as long as three meters.

# ORIGIN AND DISTRIBUTION OF COMMUNITIES

## Chapter 29 Vocabulary

Review the new words in Chapter 29 of your textbook.

Match the definition in Column A with the correct term in Column B.

### Column A

### Column B

- |  |                         |
|--|-------------------------|
| _____ 1. Ocean region above the continental shelf                              | a. geothermal energy    |
| _____ 2. Equatorial woodlands  | b. climax community     |
| _____ 3. Region just south of the tundra                                       | c. permafrost           |
| _____ 4. Small area, within an environment, varying in temperature or moisture | d. neritic zone         |
| _____ 5. Receives 25 to 75 cm annual rainfall                                  | e. desert               |
| _____ 6. Deepest waters of the ocean basin                                     | f. tropical rain forest |
| _____ 7. Animals that live on the ocean floor                                  | g. biomes               |
| _____ 8. Organisms that float in the water                                     | h. taiga                |
| _____ 9. Heat energy from Earth's interior                                     | i. temperate forest     |
| _____ 10. Northernmost biome   | j. tundra               |
| _____ 11. Region having less than 25 cm of rainfall per year                   | k. oceanic zone         |
| _____ 12. Aquatic animals that move freely through water                       | l. grassland            |
| _____ 13. Large land areas that have similar climates and forms of plant life  | m. microenvironment     |
| _____ 14. Soil permanently frozen  | n. benthos              |
| _____ 15. Woodland south of the taiga having seasonal climate                  | o. nekton               |
| _____ 16. Final stage of successional development                              | p. biosphere            |
| _____ 17. Term for all of the world's land and water ecosystems                | q. plankton             |