

## Section 4–4 Aquatic Ecosystems (pages 106–112)

*This section explains the main factors that govern aquatic ecosystems. It also describes the characteristics of freshwater ecosystems, freshwater wetlands, estuaries, and the different marine zones.*

### Introduction (page 106)

1. Aquatic ecosystems are primarily determined by what characteristics of the overlying water?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
2. What does the depth of the water determine? \_\_\_\_\_  
\_\_\_\_\_
3. What does water chemistry primarily refer to? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Freshwater Ecosystems (pages 106–107)

4. What are the two main types of freshwater ecosystems?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
5. Where do flowing-water ecosystems originate? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. How does the circulating water in a standing-water ecosystem affect the ecosystem? \_\_\_\_\_  
\_\_\_\_\_
7. What is plankton? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Complete the table about kinds of plankton.

**KINDS OF PLANKTON**

Kind	Organisms	How Nutrition Obtained
	Single-celled algae	
	Planktonic animals	

9. What is a wetland? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

10. What is brackish water? \_\_\_\_\_
11. What are three main types of freshwater wetlands?  
a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_
12. What distinguishes a marsh from a swamp? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Estuaries** (page 108)

13. What are estuaries? \_\_\_\_\_  
\_\_\_\_\_
14. Tiny pieces of decaying plants and animals make up the \_\_\_\_\_ that provides food for organisms at the base of an estuary's food web.
15. Circle the letter of each sentence that is true about estuaries.  
a. Most primary production is consumed by herbivores.  
b. They contain a mixture of fresh water and salt water.  
c. Sunlight can't reach the bottom to power photosynthesis.  
d. They are affected by the rise and fall of ocean tides.
16. What are salt marshes? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
17. What are mangrove swamps, and where are they found? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Marine Ecosystems** (pages 109–112)

18. What is the photic zone of the ocean? \_\_\_\_\_  
\_\_\_\_\_
19. The permanently dark zone below the photic zone is called the \_\_\_\_\_.
20. What are the three main vertical divisions of the ocean based on the depth and distance from the shore?  
a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_
21. Circle the letter of each sentence that is true about the intertidal zone.  
a. Organisms there are exposed to extreme changes in their surroundings.  
b. The rocky intertidal zones exist in temperate regions.  
c. Organisms are battered by currents but not by waves.  
d. Competition among organisms often leads to zonation.

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

22. What is zonation? \_\_\_\_\_  
\_\_\_\_\_

23. What are the boundaries of the coastal ocean? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

24. Why is the coastal ocean often rich in plankton and many other organisms?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25. A huge forest of giant brown algae in the coastal ocean is a(an)  
\_\_\_\_\_.

26. Circle the letter of each sentence that is true about coral reefs.

- a. The coasts of Florida and Hawaii have coral reefs.
- b. The primary structure of coral reefs is made of the skeletons of coral animals.
- c. Almost all growth in a coral reef occurs within 40 meters of the surface.
- d. Only a few organisms are able to live near coral reefs.

27. What are the boundaries of the open ocean? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

28. The benthic zone covers the ocean \_\_\_\_\_.

29. What are the boundaries of the benthic zone? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

30. Organisms that live attached to or near the bottom of the ocean are called  
\_\_\_\_\_.

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

## WordWise

*Answer the questions by writing the correct vocabulary terms from Chapter 4 in the blanks. Use the circled letter from each term to find the hidden word. Then, write a definition for the hidden word.*

What are physical factors that shape ecosystems?

— ○ — — — — — — — — — — — — — — — —

What is the full range of physical and biological conditions in which an organism lives and the way in which the organism uses those conditions?

— ○ — — — — —

What are the planktonic animals called?

— ○ — — — — — — — — — — — — — — — —

What is a layer of permanently frozen subsoil in the tundra?

— — — ○ — — — — — — — — — — — — — — — —

What is the average, year-after-year condition of temperature and precipitation in a particular region?

— — — — — — — ○

**Hidden Word:** — — — — —

**Definition:** \_\_\_\_\_  
\_\_\_\_\_