**Conditions Underwater** Aquatic ecosystems are determined mainly by the depth,

flow, temperature, and amount of dissolved nutrients of the water.

The **photic zone** is the sunlit upper layer of water where photosynthesis can occur.

The **aphotic zone** is the dark lower layer where photosynthesis cannot occur.

The benthic zone is found on the bottoms of lakes, streams, and oceans. The organisms

that live on the floor of a body of water are called **benthos.**

**Freshwater Ecosystems** Freshwater ecosystems include flowing-water ecosystems,

standing-water ecosystems, and freshwater **wetlands. Plankton** are common. They form the base of many aquatic food webs.

**Estuaries Estuaries** are wetlands formed where rivers meet the sea. They contain a

mixture of fresh and salt water. Most of the food produced in estuaries enters food webs as

tiny pieces of organic matter, or detritus.

**Marine Ecosystems** Marine ecosystems are found in the ocean. The intertidal zone is the shallowest and closest to land. It is exposed to the rise and fall of tides each day.

The coastal ocean is the relatively shallow border of water that surrounds the continents.

The open ocean begins at the continental shelf and extends outward. The open ocean can

be divided into the photic zone and the aphotic zone.

**Conditions Underwater**

**1.** What are the four main factors that affect aquatic ecosystems?

**2.** What does the depth of the water determine?

**3.** What distinguishes the photic zone from the aphotic zone in an aquatic ecosystem?

**Freshwater Ecosystems**

*For Questions 4–10, complete each statement by writing the correct word or words.*

**4.** The three main categories of freshwater ecosystems are \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**5.** Flowing-water ecosystems originate from underground water sources in\_\_\_\_\_\_\_\_\_\_\_ .

**6.** Circulating water in lakes and ponds distributes \_\_\_\_\_\_\_\_\_\_\_\_,\_\_\_\_\_\_\_\_\_\_\_\_\_,and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_throughout the system.

**7.** Plankton is a general term that includes both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.

**8.** An ecosystem in which water either covers the soil or is present at or near the surface of

the soil is called a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**9.** Freshwater wetlands purify water by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pollutants.

**10.** The three types of freshwater wetlands are:

**Estuaries**

**11.** Estuaries form where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**12.** The salinity of estuary water is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**13.** Temperate estuaries characterized by salt-tolerant grasses above the low-tide

line and seagrasses below water are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Marine Ecosystems**

**14.** Complete the diagram by adding labels for each marine zone. Then shade in the aphotic zone.



**15.** Which type of marine ecosystem do you think supports the least life? Explain your

answer.