



**FOCUS:** Completing charts ("schematic tables") about passages.

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**DIRECTIONS:** Read the passage. Match the answer choices on the right side of the screen to the correct category on the left side of the screen by dragging the choices to the blanks next to the bullet points. For charts with seven choices, two will not be used. For the chart with ten choices, three will not be used.





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## The Coastal Zone



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The ocean is one of the most misunderstood and unexplored parts of the world. The area where the ocean makes contact with land is commonly referred to as the *coastal zone*. Globally, the coastal zone contains 90 percent of all ocean life, even though it only makes up 10 percent of the world's ocean area. The coastal zone literally teems with marine life and features some of the most efficient ecosystems known to man. There are two distinct areas in a coastal zone, both of which are important to the biodiversity of the ocean.

Rocky and sandy shores are features of the coastal zone that most people are familiar with. This area is the *intertidal zone*, where the ocean meets the land directly, making contact with long distances of rocky or sandy beaches and cliffs. Because of the gravitational pull exerted by the moon and sun on Earth, the tides rise and fall about every six hours in these shore areas. The creatures that occupy the intertidal areas are incredibly **robust**, as they must cope with being completely submerged in the ocean's tide and, shortly thereafter, adapt to a low tide environment where they may be exposed to completely open air. These intertidal organisms deal with the constantly-changing environment by clinging to rocks, digging into the sand, or hiding in protective shells. Mussels, for instance, attach themselves to rocks and open their shells during high tide. After capturing essential nutrients and moisture from the ocean, the mussels will close their shells tightly when the tide goes down, protecting them from drying out and from the prying beaks of shore birds. This remarkable adaptability is present in most intertidal organisms and makes rocky and sandy shores a fascinating biological environment.

*Estuaries and coastal wetlands* comprise the other key area of the coastal zone. Estuaries occur where rivers meet the ocean. Here, seawater combines with fresh water and nutrients that are carried downstream by the river. Coastal wetlands--lands covered by water all or part of the year--include river mouths, inlets, bays, and salt marshes. Both estuaries and coastal wetlands are some of the most productive ecosystems known to humankind, as life can thrive in the nutrient-rich waters that are warmed by the sun. Plants and sea-life co-exist and reproduce at a **staggering** rate in these areas. Perhaps the greatest benefit offered by this area is the mangrove forest, which occurs mostly in tropical and subtropical zones. The roots of mangrove trees capture the nutrients carried by rivers and provide shelter for bird life, crustaceans, and a variety of other aquatic species. In addition, mangrove forests protect the land from severe weather. Communities behind mangrove forests enjoy protection from hurricanes, high winds, and even **tsunamis**.

Understanding these areas is key to appreciating the biological significance they have, as well as the relative benefits they can yield. Researchers estimate that more than a third of the world's mangrove forests have been destroyed to make room for shrimp farms, crops, or other coastal development projects. Had the benefits of keeping them intact been known, it may have been possible to stop their destruction. From an economic standpoint, the ecological benefits of keeping mangrove forests intact and healthy far outweigh the short-term economic benefits of using them for farming. Indeed, understanding and protecting both types of coastal areas are essential to a healthy environment and a balanced ecosystem.



[View Text](#)[Review](#)[Continue](#)**1 The Coastal Zone****Intertidal Zone****Estuaries and Wetlands**

Impact of tidal change is pronounced and obvious

Contains ten percent of the world's total ocean area

Area where rivers empty into the ocean

Organisms are forced to adapt to a frequently-changing environment

Nutrient-rich and warm waters create a productive biological environment

One of the most interesting areas for studying organism flexibility

Essential element to the biodiversity of the oceans

Area contains relatively few organisms

Barriers are generated that can protect the land behind them from extreme weather

One of the most economically valuable areas in the long-term

