

**Lesson Check: Benefits of Biodiversity**

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1) Earth has \_\_\_\_\_ major land biomes.

2) What is the difference in climate between temperate rain forests and temperate deciduous forests?

3) Which is NOT an aquatic ecosystem?

- A) freshwater
- B) taiga
- C) estuary
- D) wetland

4) Which statement is true of ponds but NOT lakes?

- A) Plants surround the shore.
- B) Surface water contains organisms that use sunlight for photosynthesis.
- C) Sunlight reaches the bottom of the body of water.
- D) People fill them in with sediment to create land for houses and other structures.

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- 5) An ecosystem has 150 organisms of 15 different species. What is the biodiversity index of this ecosystem?
- A) 165
  - B) 10
  - C) 0.15
  - D) 0.1
- 6) Which of the following does not describe an ecosystem in a state of dynamic equilibrium?
- A) An ecosystem that is constantly changing.
  - B) An equilibrium that becomes unbalanced.
  - C) An ecosystem that can return to a balanced state.
  - D) An ecosystem that can respond to disruptions.
- 7) Which of the following is a regulating service provided by ecosystems?
- A) the water cycle
  - B) pollination
  - C) food production
  - D) natural resources
- 8) Recreation and tourism are two types of \_\_\_\_\_ services provided by ecosystems.
- 9) Tropical rain forests and coral reefs are examples of ecosystem with low biodiversity.
- True
  - False

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- 10)** An estuary is where a stream or river flows into a coastal bay or harbor. Estuaries provide benefits to people and other living things in many ways. These benefits are called “ecosystem services” and are shown in the table.

**Ecosystem Services Provided by Estuaries**

Ecosystem Service	Explanation
Provides food, habitat, and raw materials	Estuaries provide food, habitat, and raw materials needed for growth, survival, and reproduction to a wide variety of plants and animals. Many ocean organisms use estuaries as nurseries.
Controls erosion	The dense plant growth holds sediment and keeps soil stable.
Protects the coastline	Estuaries absorb wave action and protect coastal areas from floods.
Purifies water	Organisms in estuaries filter the water, absorb nutrients, and cause particles in the water to settle.
Maintains fisheries and local economies	Estuaries provide food and a sheltered habitat for the young of many important fish and shellfish species that people catch, sell, and eat.
Captures carbon	Estuaries have a rich diversity of plants. The plants play a key role in the carbon cycle by capturing and storing carbon.
Provides multiple uses to people	Estuaries are popular places for tourism, recreation, commercial fishing, education, and research.

Estuaries are threatened worldwide by many factors, including invasive species, the construction of various structures for human use, commercial and recreational uses, climate change, and pollution.

A conservation group is proposing a design solution to protect an estuary.

- a. Identify **two** pieces of information that the conservation group needs to know about the estuary before they design a solution to protect it.

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b. For **each** piece of information identified in part (a), write a question that the conservation group needs to ask about the design solution.

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