

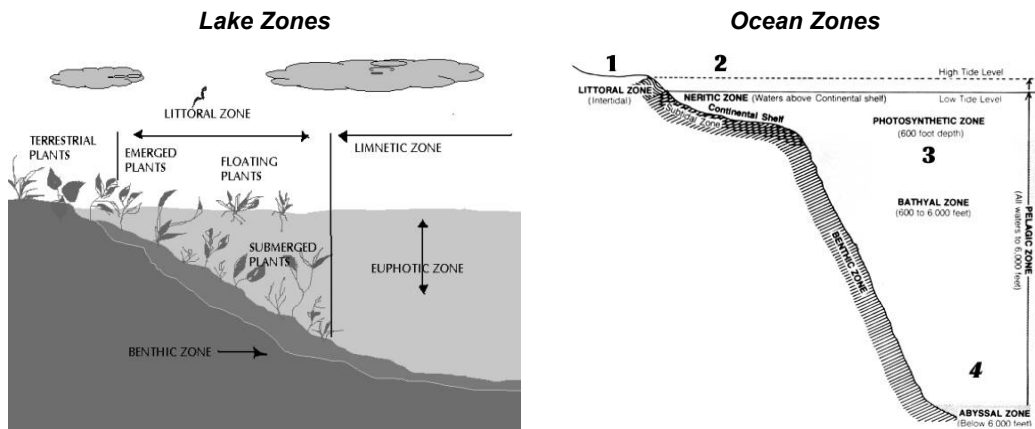
Section 3.0 Living things in aquatic environments are affected by many factors.

Student \_\_\_\_\_

Class \_\_\_\_\_

**3.1 The Diversity of Organisms In Saltwater and Freshwater Systems**

1. **Diversity** occurs within many different ecosystems around the world. The ecosystem that is the most diverse is the ...
  - A coral reefs
  - B woodlands
  - C rainforests
  - D deserts
  
2. An **ecosystem** is any place where living organisms interact with other living organisms and non-living things. This many, of all the major types of organisms, live in saltwater environments for some time in their lives ...
  - A one half
  - B two thirds
  - C one quarter
  - D three quarters
  
- 3.



Lakes are freshwater bodies in low areas of land. Like the oceans, they have layers, or zones.

The **eutrophic zone** is the open water area that still has some light penetration. This zone could be compared to this ocean zone ...

- A 1
  - B 2
  - C 3
  - D 4
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4. The **continental shelf** is a shelf of land that extends out from the edge of a continent below the ocean's surface. The water in this zone of the ocean is ...
    - A Cold and rich in a variety of species
    - B Cold and dark with few species
    - C Warm and light making it rich in nutrients
    - D Warm and dark with few nutrients

5. The **deepest lake** in the world is in Russia. Compared to the oceans, it is relatively shallow. Ocean depth can reach 11000m, whereas this lake is only 1700m. The lake in Russia is ...
- A Lake Moscow
  - B Lake Ukraine
  - C Lake Alexandria
  - D Lake Baikal
6. Another important zone in the ocean ecosystem is the one that enables many of the species that live there to live part of their lives out of the water. This zone is the **shoreline**. It is called the ...
- A Intertidal Zone
  - B Estuary Zone
  - C Continental Zone
  - D Oceanic Zone
7. Another important zone in the ocean ecosystem is the one that contains **brackish** water (a mixture of saltwater and freshwater). It is called the ...
- A Intertidal Zone
  - B Estuary Zone
  - C Continental Zone
  - D Oceanic Zone
8. **Bioluminescence** (as you learned in the **Light and Optics Unit**) is a characteristic that enables some aquatic organisms to produce their own light. The organs that enable these organisms to produce their own light are called ...
- A phosphores
  - B pituitary glands
  - C phosphorescent
  - D photophores
9. **Adaptations** are physical characteristics, or behaviors of a species, that increase its chances of survival. All living things have adaptations that are specific for the environment they live in. Fish in arctic water have a special adaptation that prevents their blood and body tissue from freezing. It is a natural ...
- A apergum
  - B antifreeze
  - C sythetic
  - D bladder
10. Organisms that live on the shoreline have adapted themselves to their environment by attaching themselves to the rocks. Their hard body shell protects them from the pounding waves that constantly bombarded them. These organisms are ...
- A clams
  - B starfish
  - C oysters
  - D barnacles

### 3.2 Populations in Fresh and Salt Water

11. The study of populations looks at groups of organisms within a particular species. A **population** is a group of organisms of the same species that live in...
- A saltwater
  - B freshwater
  - C an ocean zone
  - D a particular area

12. Using the estimation method, scientists can predict the size of a species population. They can use the **quadrant sampling method**. An example of this method follows.

24			16			12			
	40						16		
				28					
								70	
	32								
			10						
									32

To find the size of this population you would do the following ...

- A Find the average of all the numbers and multiply by the number of squares you sampled  
 B Find the average of all the numbers and multiply by the total number of squares  
 C Find the average of all the numbers and multiply by the number of rows  
 D Find the average of all the numbers and divide by the number of squares sampled
13. Population changes can occur because of a number of factors. Extremes in temperatures occur because of these types of changes ...  
 A short-term  
 B long-term  
 C permanent  
 D seasonal
14. These types of population changes can occur naturally but do not happen every year ...  
 A short-term  
 B long-term  
 C permanent  
 D seasonal
15. **Zebra mussels**, introduced into the great lakes in 1988, is an example of this type of population change ...  
 A short-term  
 B long-term  
 C permanent  
 D seasonal

### 3.3 Water Quality and Living Things

16. Prairie lakes with high concentrations of **carbonates and bicarbonates** have white coatings on the rocks near the shoreline. These minerals have been dissolved out of the soil and have made the lakes ...  
 A acidic  
 B alkaline  
 C saline  
 D indicative
17. **Brine** shrimp are microscopic organisms that live in salt lakes and brine ponds. Few other organisms can live in these environments because the environment is so ...  
 A salty  
 B warm  
 C cold  
 D acidic

18. Which of the following environments would have the greatest diversity?  
 A pond  
 B puddle  
 C lake  
 D sea
19. Often when too many chemicals are added into an environment, pollution occurs. This is evident when fertilizer runoff from farmer's fields increases the growth of green slime in a body of water nearby. This green slime is called ...  
 A algal bloom  
 B algae slime  
 C creeping algae  
 D fertile algae
20. A population is related to a species in the following way ...  
 A A specific population is part of a species  
 B A species is part of a specific population  
 C A population is a specific species in a particular area  
 D A species is specific to a particular population

The cod population off the east coast of Canada was once so huge that ships came from all over the world to fish there. When **John Cabot** – an explorer, arrived in the waters of Newfoundland, he wrote that there were so many fish in the water that the boat could only move slowly.



Today, there are so few cod that fishing for them has become very carefully controlled by regulations and catch limits.

**Over-fishing** may not be the only cause of the decline in the cod population within the Grand Banks

There are more than 40 possible reasons that could explain the decline in cod stock recovery, including: **The environment, Fish growth and survival, Reproduction Issues, and Seals**, (feeding on the cod), have also been suspected as a "possibility", that they are "preventing recovery of the cod stock."  
<http://www.gov.nf.ca/exec/premier/gbanks.htm>      [http://www.dfo-mpo.gc.ca/media/backgrou/2003/cod-3\\_e.htm](http://www.dfo-mpo.gc.ca/media/backgrou/2003/cod-3_e.htm)

What do you suggest could be done to protect the cod stocks in the Grand banks?

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What else should be done to increase the population?

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