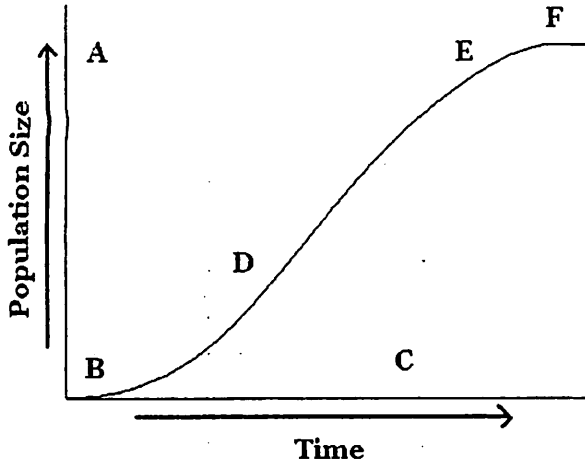


# Biology Study Guide

## Unit 2: Ecology

The information on this study guide is covered in chapters 3-6 in *Biology by Miller & Levine*.

1. Define the term ecosystem in your own words; provide two examples.



2. Use the graph of population growth above for the following questions. What letter represents...
  - Carrying capacity?
  - The start of a population?
  - Population increasing rapidly?
  - Population growth slowing down?
  - The x axis?
  - The y axis?

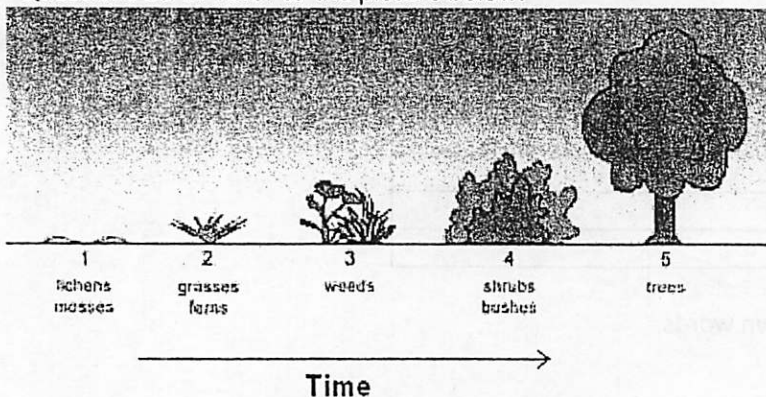
3. Complete the table below, listing examples of biotic and abiotic factors.

BIOTIC	ABIOTIC

4. Explain carrying capacity in your own words.
5. What is the role of decomposers in the environment?
6. What is the difference between biotic and abiotic factors?
7. Put the following terms in order from least to most complex: ecosystem, biosphere, organism, population, biome, species, community

8. What is the difference between a community and an ecosystem?
9. What's the difference between a heterotroph and an autotroph?
10. Two species of closely related, carnivorous wildcats live in the same jungle. Species A is much more aggressive and a better hunter than Species B. Make a prediction about what will happen to these populations.
11. In the question above, why are the two species of wildcats in competition with each other?
12. What conditions support biodiversity?
13. What causes competition between two organisms?
14. A small pond hosts a small food web. The organisms that live there are algae, fish, birds, and bacteria. The birds eat the fish and the fish eat the algae. An industrial company (not up to environmental standards!) dumps mercury in the pond. How might this affect the pond community?  
*Hint: Mercury is not biodegradable—think about what human impact concerns this trait.*

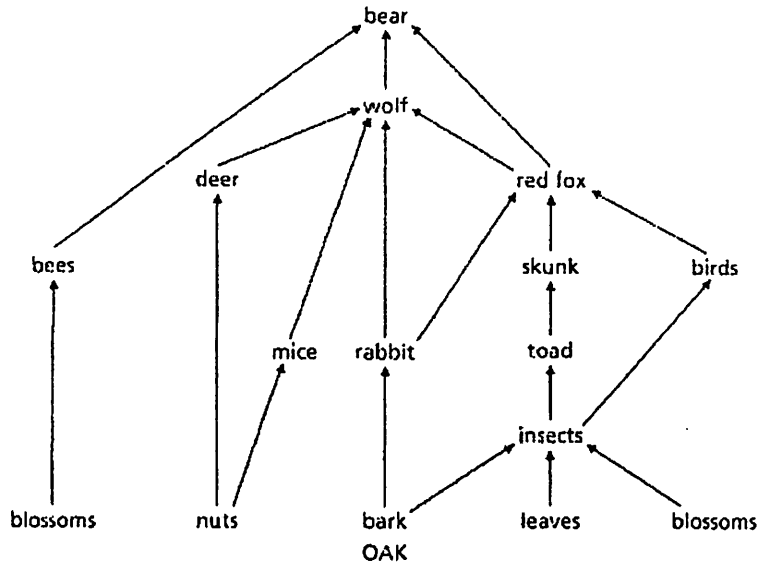
Questions 15-17 refer to the picture below.



Modified from: <http://www.geographyalltheway.com/>

15. What does the above set of pictures illustrate? (*Be specific!*)
16. What term would you use to describe the community at point 1?
17. What term would you use to describe the community at point 5?

Question 18 refers to the food web below.



18. What would happen to the food web above if all of the toads suddenly died off?
19. What would happen in an ecosystem if the number of producers was *reduced*?
20. There are four categories of symbiotic relationships. Describe and provide one example of each.
- Commensalism
  - Mutualism
  - Parasitism
  - Predator/prey
21. How does the flow of energy and nutrients in an ecosystem differ?
22. What is the ozone layer, and what is one of its roles?
23. What produces global warming?
24. Define sustainable development; give two examples.
25. What two elements contribute to the formation of acid rain? How do they get into the atmosphere?

26. Explain the difference between density-dependent limiting factors and density-independent limiting factors. Give examples of each.

27. Describe exponential growth. Can this type of growth go on forever? Sketch a graph with this type of growth.

28. Describe logistic growth. Make sure to explain the concept of carrying capacity. Sketch a graph with this type of growth.

29. What is climate change and how does it relate to global warming? What are some things that we can do to help slow down or reverse climate change?

30. Look over all your notes, homework assignments, and reread Chapters 3-6 in the textbook. Make sure you are prepared for the ecology test! ☺