

Name \_\_\_\_\_

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**AP: CHAPTER 50: ECOLOGY & THE BIOSPHERE**

1. List examples of factors that limit geographic distribution.

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\_\_\_\_\_

2. Define the terms:

a. Biosphere \_\_\_\_\_

b. Ecosystem \_\_\_\_\_

c. Community \_\_\_\_\_

d. Population \_\_\_\_\_

3. How does dispersal influence distribution?

\_\_\_\_\_  
\_\_\_\_\_

4. What are the most important factors influencing terrestrial distribution?

\_\_\_\_\_  
\_\_\_\_\_

5. Define the term biome. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6. What is the largest biome on earth? \_\_\_\_\_

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7. Identify factors that are significant to organism distribution and abundance in a lake.

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8. What is the difference between a lake that is oligotrophic and one that is eutrophic?

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9. Fill in the following chart

<b>Biome</b>	<b>Abiotic Characteristics</b>	<b>Biotic Characteristics</b>
Tropical Rain Forest		
Savanna Desert		
Temperate Grassland		
Temperate Deciduous Forest		
Coniferous Forest (Taiga)		
Arctic Tundra		

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### AP: CHAPTER 51: BEHAVIORAL BIOLOGY

1. Define the two basic types of behavior.

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2. Compare and contrast instincts and reflexes.

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3. What is a fixed action pattern?

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4. Describe the following behaviors:

a. Imprinting \_\_\_\_\_

b. Habituation \_\_\_\_\_

c. Trial and Error \_\_\_\_\_

d. Associative Learning \_\_\_\_\_

• Classical conditioning \_\_\_\_\_

• Operant conditioning \_\_\_\_\_

e. Agonistic behavior \_\_\_\_\_

f. Dominance Hierarchy \_\_\_\_\_

g. Altruistic Behavior \_\_\_\_\_

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5. Explain the difference between proximate and ultimate causes.

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6. In the PowerPoint presentation, why do you think the birds are spaced that particular distance apart?

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7. List an advantage and a disadvantage of defending a territory.

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8. What are pheromones and how do they help in communication?

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9. What are circadian rhythms and how are they of adaptive value?

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10. Explain the evolutionary adaptation of kin selection.

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### AP: CHAPTER 52: POPULATION ECOLOGY

1. How can an ecologist estimate the numbers of individuals in a population?

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2. What are some possible difficulties in counting populations?

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3. Describe three patterns of dispersal.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

4. Compare the survival strategies of species and give an example of each type.

a. Type I \_\_\_\_\_

b. Type II \_\_\_\_\_

c. Type III \_\_\_\_\_

5. Write the formula for population growth without limits. Define the terms.

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6. Define carrying capacity. \_\_\_\_\_

\_\_\_\_\_

7. Write the formula for population growth with limits. Define the terms.

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\_\_\_\_\_

\_\_\_\_\_

8. What happens to a population when the number of individuals approaches carrying capacity?

\_\_\_\_\_

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9. Compare K-selected to r-selected species. Give examples of each.

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\_\_\_\_\_

\_\_\_\_\_

10. Identify factors that regulate population size. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11. Compare density-independent and density-dependent factors limiting populations.

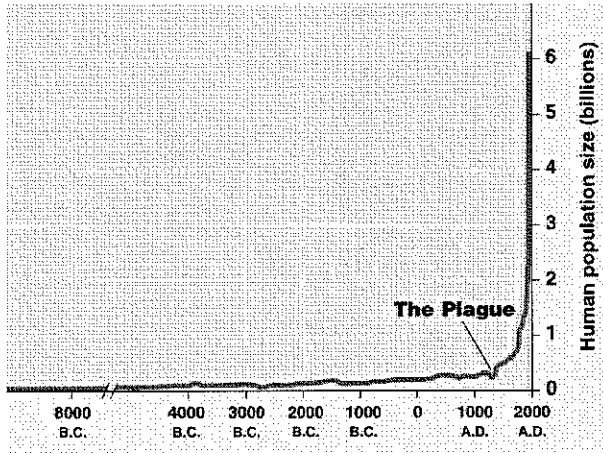
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12. Look at the growth curve of the human population. How does it compare to the growth curves earlier in the chapter?




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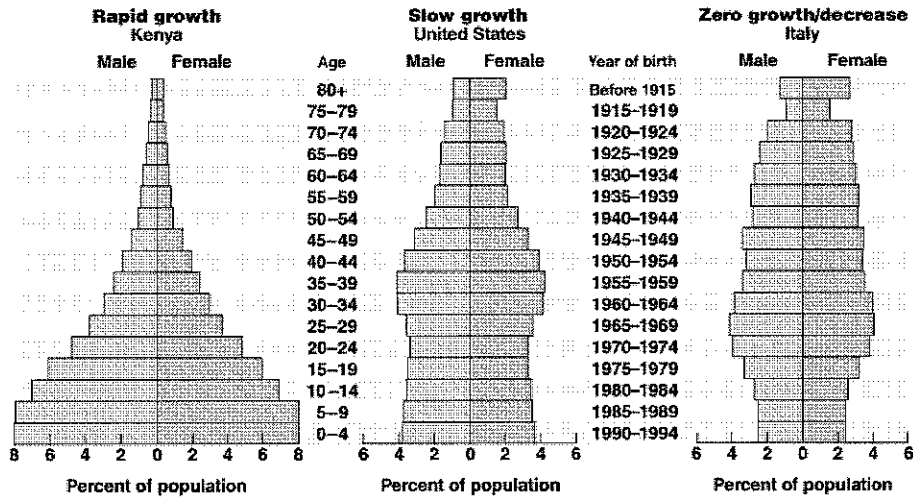
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13. Have humans reached K? What factors are significant when explaining our growth curve?

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14. Look at the age structure diagrams of different countries. How might the age structure influence policy?




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### AP: CHAPTER 53: COMMUNITY ECOLOGY

1. How is co-evolution significant in community ecology?

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2. Fill in the chart of interspecific interactions.

Interaction	Effects on Population Density	Example
Competition		
Predation (includes parasitism)		
Mutualism		
Commensalism		

3. What is the competitive exclusion principle?

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4. Describe Gause's experiment with Paramecia.

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5. Define ecological niche. \_\_\_\_\_

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6. Define and give an example of resource partitioning.

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7. Describe several defense mechanisms to predation in plants.

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8. Define and give an example of the following animal defenses:

a. Cryptic coloration \_\_\_\_\_

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b. Aposematic coloration \_\_\_\_\_

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c. Batesian mimicry \_\_\_\_\_

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d. Mullerian mimicry \_\_\_\_\_

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9. What is meant by the "trophic structure" of a community?

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10. What does a food web show that isn't indicated by a food chain?

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11. What limits the length of a food chain?

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12. Define a keystone species and why are they so important to a community?

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13. Define ecological succession.

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14. What is the difference between primary and secondary succession?

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### AP: CHAPTER 54: ECOSYSTEMS

1. How does the definition of ecosystems expand on the concept of the community?

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2. What is needed to maintain a self-sustaining ecosystem?

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3. Define the following energy budget terms:

a. Primary productivity \_\_\_\_\_

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b. Gross primary productivity \_\_\_\_\_

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c. Net primary productivity \_\_\_\_\_

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4. Which ecosystems have the highest productivity per unit area?

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5. What factors do you think contribute to such high productivity?

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6. Why is the open ocean so low in productivity?

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7. What is secondary productivity? \_\_\_\_\_

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8. What happens to the size each level in the idealized pyramid as energy is transferred through the trophic levels?

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9. Explain what happens to the energy and biomass as it is passed through the trophic levels?

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10. Why is it essential that elements move through biogeochemical cycles in the ecosystem?

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11. What are the major processes that move carbon through the ecosystem?

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12. What is the impact of combustion on the carbon cycle?

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13. Identify the role of each of the following in the nitrogen cycle:

a. Nitrogen fixation \_\_\_\_\_

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b. Ammonification \_\_\_\_\_

\_\_\_\_\_

c. Nitrification \_\_\_\_\_

\_\_\_\_\_

d. Denitrification \_\_\_\_\_

\_\_\_\_\_

e. Assimilation \_\_\_\_\_

\_\_\_\_\_

14. Why is human population growth at the root of environmental issues?

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\_\_\_\_\_

15. Define cultural eutrophication. Why is it a problem?

\_\_\_\_\_

\_\_\_\_\_

16. What is the source of acid rain? \_\_\_\_\_

\_\_\_\_\_

17. Why is acid rain a problem? \_\_\_\_\_

\_\_\_\_\_

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18. What happens in biological magnification?

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19. What would be some of the properties of molecules that could be candidates for biological magnification?

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20. What are possible reasons for global warming called the greenhouse effect?

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21. Is depletion of the ozone layer a possible reason for global warming?

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22. What is the cause for the depletion of the ozone layer? Why is it a problem?

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23. List several additional disruptive impacts humans have had on the environment.

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