

Name \_\_\_\_\_ Period \_\_\_\_\_

**Chapter 56: Conservation Biology and Global Change**

This chapter looks at the importance of biodiversity and how it can be maintained in populations, as well as human threats to environmental stability. You will find scientific discussions of many of the important topics of ecology that are in the news today: ozone depletion, carbon emissions, invasive species, and habitat loss.

*Overview*

1. Ecologists are particularly concerned about the impact of human activities on which four processes of the biosphere?
2. What is *conservation biology*?

**Concept 56.1 Human activities threaten Earth's biodiversity**

1. Ecologists organize biodiversity on three levels. In the following table, explain the impact of decreasing diversity in each division.

Level of Biodiversity	Impact
Genetic diversity	
Species diversity	
Ecosystem diversity	

2. Explain the difference between *endangered species* and *threatened species*.
3. Use this table to organize your thoughts on how the following four threats affect biodiversity.

Threat to Biodiversity	How It Reduces Biodiversity
Habitat loss	
Introduced species	
Overharvesting	
Global change	

4. List five *introduced species* that present a serious threat to their new communities. Explain the damage done by each introduced species. Include two introduced species that are a threat in your own region of the country. Indicate these with an asterisk (\*).

Introduced Species	Damage
1.	
2.	
3.	
4.	
5.	

**Concept 56.2** *Population conservation focuses on population size, genetic diversity, and critical habitat*

5. What do conservation biologists who adopt the *small-population approach* study?
6. What is an *extinction vortex*? Explain what drives an extinction vortex.
7. Why is the total number of individuals in a small population not a good measure of its reproductive potential?
8. On what type of population does the *declining-population* model focus?
9. What is the emphasis for study in the declining-population model?
10. Scientists drilled nest holes for red-cockaded woodpeckers in an attempt to increase their population levels. How is this action a response to the declining-population model?

**Concept 56.3** *Landscape and regional conservation help sustain biodiversity*

11. Describe how the increase in cowbirds is related to forest fragmentation.
12. What are potential positive and negative effects of *movement corridors*?
13. Explain the concept behind a zoned reserve.

**Concept 56.4** *Earth is changing rapidly as a result of human actions*

This section looks at the human impact on ecosystems.

14. How has agriculture affected nitrogen cycling? What are some negative consequences of nutrient enrichment?
15. Explain the process of biological magnification. Discuss at least one example.

16. What is meant by the *greenhouse effect*? What would life on Earth be like without this effect?
17. What is contributing to the great increase in atmospheric carbon dioxide? What are potential effects of this increase?
18. How is atmospheric ozone depleted? What are projected effects of this depletion?

*Concept 56.5 Sustainable development can improve human lives while conserving biodiversity*

19. Explain the concept behind the phrase *sustainable development*.

*Test Your Understanding Answers*

Now you should be ready to test your knowledge. Place your answers here:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

Kudzu, the wonder vine!

