Chapter 56 – Conservation Biology

The Biodiversity Crisis

1. Distinguish between conservation biology and restoration biology.
2. Describe the three levels of biodiversity.
3. Explain why biodiversity at all levels is vital to human welfare.
4. List the four major threats to biodiversity and give an example of each.

Conservation at the Population and Species Levels

5. Define and compare the small-population approach and thedeclining-population approach.
6. Explain how an extinction vortex can lead to the extinction of a small population. Describe how a greater prairie chicken population was rescued from an extinction vortex.
7. Describe the basic steps that are used to analyze declining populations and determine possible interventions in the declining-population approach. Describe the case of the red-cockaded woodpecker to illustrate this approach.
8. Describe the conflicting demands that accompany species conservation.

Conservation at the Community, Ecosystem, and Landscape Levels

9. Explain how edges and corridors can strongly influence landscape biodiversity.
10. Define biodiversity hot spots and explain why they are important.
11. Explain why natural reserves must be functional parts of landscapes.
12. Define zoned reserves and explain why they are important.
13. Define restoration ecology and describe its goals.
14. Explain the importance of bioremediation and biological augmentation of ecosystem processes in restoration efforts.
15. Describe the process of adaptive management.
16. Describe the concept of sustainable development.
17. Explain the goals of the Sustainable Biosphere Initiative.
18. Define biophilia and explain why the concept gives some biologists hope.