University of Arizona
182 INTRODUCTORY BIOLOGY
Spring 2010
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Practice Worksheet
Lecture 6 : Ecological communities and conservation biology

Corresponding sections in Biological Science (Freeman, 3rd ed.)

Chapter 50 : 50.1, 50.4, 50.5
Chapter 52 : 52.3
Chapter 53 : 53.1, 53.2, 53.3, 53.4
Chapter 54 : 54.1, 54.3
Chapter 55 : 55.1, 55.2, 55.3, 55.4

Review important information

1. What is an ecological community ? What are the main factors that determine the composition and structure of a community ?
2. What are the main four types of ecological interactions ?
3. How does competition affect community structure ?
4. What are the different modes of competition in ecological communities ?
5. How does predation affect the populations of prey and their predators ?
6. Explain why mutualistic interactions are important for the persistence of life on Earth.
7. What types of disturbances can affect ecological communities ?
8. What is a « keystone species » ? What is an « ecological engineer » ? Can you give an example of each ?
9. Review the two examples of ecological cascading effects that we describe in class.
10. What is « biodiversity » ? What are the three ways of evaluating it that we described in class ?
11. Ecologists have put a great deal of research into documenting and explaining the « latitudinal species richness gradient ». What is it ?
12. What do you know about the relationship between ecosystem productivity and species richness ?
13. Use experiments-based arguments to explain why biodiversity is important for the persistence and function of ecosystems.
14. How do humans affect species diversity ?
15. What is « conservation biology » ? What are the three principles guiding research in conservation biology ?
16. What are the four main factors of species extinction ?
17. Why is habitat fragmentation an accute problem for species persistence ?
18. How can we predict the number of species that may be lost in a given region as a consequence of habitat destruction ?
19. What are three important mechanisms by which the introduction of exotic species can cause great threats to species diversity ?
20. How does conservation biology guide the choice of areas to be protected ?
21. What is « restoration ecology » ? « reconciliation ecology » ?