CHAPTER 52
AN INTRODUCTION TO ECOLOGY AND THE BIOSPHERE

Learning objectives

The Scope of Ecology

1. Define ecology.
2. Describe the relationship between ecology and evolutionary biology.
3. Distinguish between abiotic and biotic components of the environment.
4. Distinguish among organismal ecology, population ecology, community ecology, ecosystem ecology, and landscape ecology.
5. Clarify the difference between ecology and environmentalism.

Interactions between Organisms and the Environment Limit the Distribution of Species

6. Define biogeography.
7. Describe the questions that might be asked in a study addressing the limits of the geographic distribution of a particular species.
8. Explain how dispersal may contribute to a species' distribution.
9. Distinguish between the potential and actual range of a species.
10. Explain how habitat selection may limit distribution of a species within its range of suitable habitats.
11. Describe, with examples, how biotic and abiotic factors may affect the distribution of organisms.
12. List the four abiotic factors that are the most important components of climate.
13. Distinguish between macroclimate and microclimate patterns.
14. Explain, with examples, how a body of water and a mountain range might affect regional climatic conditions.
15. Provide an example of a microclimate.
16. Describe how an ecologist might predict the effect of global warming on distribution of a tree species.