

Life Chapter 55: Community Ecology -- Questions and Comments
Conservation Biology
Spring 2009

1. Note that some of the material in this chapter was covered earlier in lecture (see notes below). The reason is that is that different folks tend to put certain topics into different pigeon holes (for example, ecological interactions into evolutionary ecology instead of community ecology as in the *Life* book).

2. Terms:

community	superorganism	trophic level
producer, photosynthesizer	autotroph	heterotroph
Primary, secondary and tertiary consumers	Detritovore, decomposer	herbivore
omnivore	Food web	Food chain
biomass	Inter- and intra-specific competition	Trophic cascade
Keystone species	Succession; primary succession	Ecological disturbance
Species richness		

3. What is the evidence that communities are more like loose assemblages of species than "superorganisms". What are the main factors that determine species composition in a community? Relate this to the niche concept that we considered earlier; also be sure to consider material in all parts of the chapter when answering this question.

4. Be able to distinguish between food webs and food chains.

5. Why do most communities have at most 5 trophic levels. Be able to draw a typical biomass or energy diagram (sometimes called pyramid, but that is only true for certain ecosystems) for a forest and grassland. Be able to explain the reasons for the shapes of these diagrams.

6. Review the material on ecological interactions – be sure to read up on amensalism – something we did not say much about in class.

7. Do predators/herbivores affect the distribution and population sizes of prey/producers? Explain. Name several other factors (not necessarily in this chapter) that also affect population size/distribution.

8. Explain the role of the density of susceptible individuals to the spread and number of parasites found in a given area over time. Why not just "individuals" – why susceptible?

9. Relate the notions of intra and interspecific competition to what we learned about *K* and competition coefficients earlier in the course.

10. What is a trophic cascade? Use the wolf example from Yellowstone National Park to illustrate your answer.

11. What is ecological succession and give some examples of its causes (i.e., why does it progress from one stage to the next). From what we learned in class, why does succession sometimes stop due to disturbance (for example, southeastern pine forests as a "fire-maintained climax")?

12. What is the intermediate disturbance hypothesis? Explain Sousa's experiment with intertidal boulders and what it showed.

13. What are ecological inhibition and succession (the book doesn't use the term "ecological") and how do they relate to succession patterns?

14. List and understand the factors that determine community species richness. Pay particular attention to figs. 55.20 and 21.

15. What has this chapter suggested to you about the importance of individual species in the function of a biotic community? Think about this as this is perhaps the most important thing you could learn from this chapter.