

Biology 205 - Principles of Ecology
Dr. Kilburn, Fall 2002
New study guide questions

Ecology of populations:

Patterns of distribution and density:

Substitute nine-banded armadillos for sugar maples in question #1.

Discuss the dispersion patterns of trees along montane moisture gradients. Relate Whittaker's (and others') findings to the patterns found for birds at continental scales.

Population dynamics:

Add **finite (geometric) rate of increase** to question 6.

Population growth:

Change questions 1-3 to:

1. Under what conditions will organisms grow geometrically? Give a verbal explanation of geometric growth, including a discussion of both changes in population size and population growth rate. Give the equation for geometric growth.
2. Under what conditions will organisms grow exponentially? Give a verbal description of exponential growth. Clearly explain and distinguish (1) the change in population size and (2) the change in population growth rate over time. Draw a graph of this process. What part of the graph represents population size? What part represents the rate of population growth?
3. Write the equation for both population size and the population growth rate under conditions of exponential population growth. In this model, is r constant or variable? Explain why the rate of growth increases over time.