

Study Questions and Reading Guide: Kareiva & Marvier, Chapter 7
Conservation Biology
Spring 2011

Reading:

I. Terms to know (there are others that I expect you already know (e.g., "heterozygote")):

Demographic stochasticity	Environmental stochasticity	Polymorphism (P)	Heterozygosity (H)
Genetic drift	Inbreeding	Inbreeding depression	Heterozygote advantage
Gene flow	Bottleneck		

II. Questions:

1. What is the chance that four individuals, with a chance of surviving one year of 0.8 (indiv. #1), 0.9 (indiv. #2), 0.9 (indiv. #3), and 0.3 (indiv. #4) will all survive through the year? Will all die over the next year? (ans = 0.1944 (19.4%) and 0.0014 (1.4%) – how do you get these answers?)
2. What are the causes of heterozygote advantage?
3. Why are pedigrees important in captive breeding programs?
4. List the genetic reasons that inbreeding causes problems.
5. What is the definition of the term effective population size (N_e)?
6. Be familiar with the many causes of N_e being lower than the actual population size and why each of these causes should result in a lower N_e . We will also cover this topic in some detail in class.
7. What are the genetic problems caused by small population size?
8. Explain in some detail the Allee Effect.
9. What is the extinction vortex – explain the process and the factors that contribute to it.

Be certain to read the study questions at the end of the chapter.