Metapopulation Homework — due Monday, 5 May

1. Problem 1, Chapter 16 of Case. **Explain your answer.**

2. An endangered population of 100 frogs lives in a single pond. One proposal for conserving the frog population is to split it into three populations of 33 frogs, each in a separate pond. You know from your demographic studies that decreasing the frog population from 100 to 33 individuals will increase the yearly risk of extinction from 10% to 50%. In the short run, is it a better strategy to retain the single population or to split it into three? Explain your answer.

3. [slightly modified from initial version] How would elimination of some patches affect the dynamics of a metapopulation, in terms of Levins’ model? (Think about the factors we discussed that are involved in colonization and extinction in the “incidence function” model, and from this deduce whether and how the rates in the simpler model would change.)