Final Exam

Since this is a take-home exam, I expect you to provide qualitatively different answers than on a classroom exam. I am not looking for a particular answer for each question. Rather, I am looking for you to answer each question with a carefully reasoned and well-written essay. In addition to the organizational quality of your essay, you will be evaluated on the degree to which you are able to synthesize ideas from across the topics we have discussed in the course. Feel free to use examples of real organisms or communities to illustrate your points. I will be particularly impressed if you use examples that we did not talk about in the course. Answers should be about 1-2 typed pages long. Each question will be weighted equally.

You are on your honor to work independently on these questions. If you have any questions, please see me. The exam is due by Friday Dec 20 at 5 PM. I cannot accept late exams, under college rules. DO NOT leave the printing of your essays (or the writing of them, for that matter) to the last minute.

1. Choose one of the papers we read this semester and propose a study that extends that described by the authors. Don't propose a study that simply fixes some flaw in the authors' experiments, e.g. a lack of replication. Rather, address an interesting question that is raised by the results of the authors' work. Make sure you indicate how the results of your study would support or refute the hypothesis you are considering.

2. All branches of biology that describe themselves as “evolutionary” struggle with the constraints of studying historical phenomena using the scientific method. Describe the variety of general methods by which evolutionary ecologists test hypotheses about history, and discuss their relative strengths and weaknesses. Illustrate your arguments with examples.

3. Discuss the variety of general contexts in which consideration of body size is important to understanding the evolution of species’ characteristics.

4. In the last paper we read and discussed, John Thompson described six observations from evolutionary ecology that he claimed were important to preserving biodiversity. As a graduate of this course, I’ve chosen you to be an emissary to the managers of a threatened ecosystem (which you may choose), and assigned you the task of communicating the importance of one of the six observations to them. Explain to me (a) why you choose the observation you did, (b) how you will convince the managers that this observation is important, and (c) what changes in their management policies this would argue for.