

WILD 7250 - Wildlife Population Analysis

www.auburn.edu/~grandjb/wildpop

Lab 01 – Analysis of Animal Populations: Theory and Scientific Process

Scientific rigor

This exercise may be completed individually or in a small group. If you choose to work in a group please indicate the members of your group when you submit your results. Pick a recent issue(s) of a good scientific journal related to your field of interest or general ecology, and critique no fewer than 10 feature length research articles answering the following questions about each.

1. Which articles clearly articulated the working hypotheses versus null hypotheses for the research? Read [Johnson \(1999\)](#) if you don't remember what a null hypothesis is.
2. Which articles included a justification based in theory?
3. Which articles clearly identified models either conceptual or mathematical that could be used as either the basis for predictions or comparisons to data?
4. Evaluate the scientific rigor of each article by indicating whether the research was based on the four categories below:
 - a. Experimental manipulation using appropriate controls, replication & randomization,
 - b. Impact studies (before and after) preferably with replication & randomization,
 - c. Observation based on *a priori* hypotheses
 - d. Observation and *a posteriori* description

Present your results in the form of a table as below:

Journal: Ecology (August 2007)				
Title	Working hypotheses	Hypotheses built on stated theory	Models clearly identified	Scientific rigor
Prey density and the behavioral flexibility of a marine predator: the common murre (<i>Uria aalge</i>)	Yes	Yes	Yes	Observation based on <i>a priori</i> hypotheses

5. Be prepared to discuss your results next week. In particular, what you think about the quality of the journal you chose, and why.