Biogeography Project
Spring 2014

I. Description

For your class project, you will research a topic on biogeography that interests you. You will then present your project to the class as well as turn in a paper.

You will turn in your proposed topic as part of a homework assignment early in the semester.

In-class presentations of class projects will occur during the final two weeks of class. You will give a 10-15 minute presentation on your topic. This presentation should be developed concurrently with your paper and summarize the paper. You will also evaluate and grade other students on their presentations. More information on the schedule will be given later in the semester.

The final paper will be roughly 10 pages but no more than 15 pages (double-spaced; figures and references extra) that includes the following items: introduction and background (including significance/justification of topic; why is this topic important and why did you select it?), methods and results OR synthesis, conclusions, references. All appropriate statements in your paper should be cited; see below for more information. Grammar, syntax, correct citations and clarity of writing will count for 15% of your paper score.

Do not plagiarize. Copying text verbatim without proper citation is considered plagiarism. See syllabus for more information.

Group projects are allowed, but the scope of the project should increase proportionally. Each group member will be required to list their contribution to the project in the paper as well as participate in the class presentation. All members of a group will receive the same grade. See me if you'd like to do a group project.

II. Topics

Possible questions:

1. Perform some modeling or data analysis, such as modeling the effects of climate change on tree habitats in the US. Please see me for more information.

2. Select a topic of your choice that relates to biogeography.

3. Chose from a topic below:

    What is the biogeographical story of some species of interest (current or extinct)? Where did it evolve, where is its range now, what controls its distribution, what are any threats?

    How has past climate change impacted and how will future climate change affect a species/family/taxon?
    - same as above but for other threats (invasive species; land cover change; human activities)?

Why is the sex ratio of offspring of some reptile species (which?) sensitive to temperature, and what are the implications of future climate change?

III. Grading

You will be graded on four aspects of your project:

a. paper	70% (100 points)	
proposed topic on time		5/100 points
annotated bibliography on time		5/100 points
writing style		15/100 points
b. presentation	25%	
c. your evaluation of others' presentations	5%	

VI. Deadlines

1. Select a topic for the class project (part of an early homework).

2. Create an annotated bibliography by summarizing 4-5 relevant references on your topic. Select at least three from the primary literature (original research published in a scientific journal; textbooks are considered secondary literature, and encyclopedias are considered tertiary literature). An annotated bibliography consists of a citation of each reference (in a standard format) and several sentences that describes the study and its relevance to your project. An example:

> Logan, J., J. Regniere, and J. A. Powell. 2003. Assessing the impacts of global warming on forest pest dynamics. Frontiers in Ecology and the Environment **1**:130-137. Journal paper describing how global warming has affected and will affect several important insect species of the United States, including gypsy moth, spruce beetle, and mountain pine beetle. The paper shows how recent hot, dry weather has contributed to multiple outbreaks across North America, and that future projections will result in redistributions of these species.

Email me this bibliography by Wednesday, March 26.

3. The deadline for the paper is Wednesday, May 7, at midnight. Papers turned in after that will have 25% deducted for each day late.

We will have presentations in class during the last week of class. I will provide more information about these later in the semester.

V. Resources

Writing

An excellent site that you should read:
http://www.dartmouth.edu/~writing/materials/student/toc.shtml. In particular, see "Writing the Academic Paper."

Here are good web sites about writing a report about your own research:

- http://www.oxy.edu/center-academic-excellence/writing-center/discipline-specific-advise/writing-scientific-report
- http://writingcenter.unc.edu/handouts/scientific-reports/

References should be formatted according to the style set by the *Journal of Biogeography*:

References

Authors must use the system illustrated below. Unpublished data, works in preparation and papers submitted but not yet accepted may be cited in the text, giving the author's initials and surname, but should not be included in the reference list. It is the author's responsibility to obtain permission from colleagues to include their work as a personal communication. Please add the person's initials, surname and institute for personal communications.

In the text, references should be made by giving the author's name with the year of publication, as follows: (Bush & Rivera, 1998). When reference is made to a work by three or more authors the first name followed by *et al*., is used on all occasions. If several papers by the same author and from the same year are cited, a, b, c, etc. should be put after the year of publication, as follows (Schoener & Schoener, 1983a,b). When citing a list of papers, place them in date order (alphabetically when within a year) and separate them with semi-colons as follows (Schoener & Schoener, 1983a,b; Bush & Rivera, 1998, 2003; Collins, 1998, 2002; Whittaker *et al*., 2007).

In the list, references should be sorted alphabetically by first author, then by number of authors (one, two, three or more), then chronologically within the one-author group, alphabetically within the two-author group, and chronologically within the ≥ three-author group. For multi-authored works with more than 20 authors, list only the first three authors followed by *et al*. Page extents of single-volume works are not required. **Titles of journals should be given in full.** Check the Journal for reference style. Some examples are given below:

Prentice, I.C., Guiot, J., Huntley, B., Jolly, D. & Cheddadi, R. (1996) Reconstructing biomes from palaeoecological data; a general method and its application to European pollen data at 0 and 6 ka. *Climate Dynamics*, **12,** 185-194.

Cox, C. B. & Moore, P. D. (1999) *Biogeography: an ecological and evolutionary approach*, 6th edn. Blackwell Science Ltd, Oxford.

Guo, Q. (1994) *Dynamic desert* Puccinellia maritima *plant community ecology: changes in space and time*. PhD Thesis, University of New Mexico, Albuquerque.

May, R.M. (1994) The effects of spatial scale on ecological questions and answers. *Large-scale ecology and conservation biology* (ed. by P.J. Edwards, R.M. May and N.R. Webb), pp. 1-17. Blackwell Scientific Publications, Oxford.

StatSoft Inc. (2003) *STATISTICA (data analysis software system), version 6.1*. StatSoft, Inc., Tulsa, OK.

Other suggestions:

- minimize quotes from other sources; tell your own story
- each figure should have a number and caption; order the figures by when they are referred to in the text
- do not use jargon or contractions

- work on paragraph structure (separate from sentence structure and manuscript structure): include a topic sentence; discuss only one idea in a paragraph
- no cover page

Presentations

This web site gives excellent tips for giving a scientific talk (aimed at scientists, but has great info): http://www.cgd.ucar.edu/cms/agu/scientific_talk.html. Here is another good site: http://mesa.ac.nz/?page_id=491.

Research

To get the most current information, I encourage you to rely heavily on scientific journal papers.

For your purpose, reviews and papers written for biogeography journals as well as interdisciplinary journals will be valuable. Good sources include: *Global Ecology and Biogeography*, *Journal of Biogeography*, *Global Change Biology, Ecology*, *Ecological Applications, Science*, *Nature*, *BioScience*, *Trends in Ecology and Evolution*, *Frontiers in Ecology and the Environment*. Journals written for the general public such as *Scientific American* are also useful. The *National Inquirer* is not.

The Internet may or may not be a useful provider of information. It is an excellent means of finding sources of information, but not necessarily for providing accurate information. In other words, check out the information listed in Wikipedia, but do not cite that directly. Instead, follow the links and references listed.

I believe the most useful tool for you will be the ISI Web of Science journal search. This is a powerful search engine that allows you to search by topic, keyword, journal, and author. A major advantage is the ability to look "forward" in time to see papers that cite the one you are looking at, giving you the capability of seeing the most current ideas on your topic. To get to this web site, go to the UI library (http://www.lib.uidaho.edu/), select "Articles" from the tabs across the top, then select "Web of Science".