

BIOL 416, Ecosystem Ecology and Global Change  
Paper assignment  
Winter 2010

WP: 250 points; non-WP: 100 points

Your assignment is to write a paper on one aspect of global change and how ecosystem ecology applies to that issue. You can choose from one of six different aspects of global change: 1) direct effects of elevated CO<sub>2</sub>; 2) indirect effects of elevated CO<sub>2</sub> and other greenhouse gases (i.e., climate change); 3) land-use change (intensification and/or extensification); 4) altered nutrient cycles; 5) species invasions and effects on ecosystem processes; 6) altered biodiversity and effects on ecosystem processes. You must clear your topic with me first, however. Topics are due on **Jan. 20**. To get topic approval, describe your initial ideas for the paper in a paragraph, referencing at least one paper from the primary literature that will be used as a basis for your paper. Feel free to talk with me beforehand for initial feedback, or if you are having difficulty coming up with a specific topic. Your paper **must** deal with what is known about the topic you choose, as well as what uncertainties remain. For literature searches, I strongly suggest using the Web of Science data base, available on Western's library web site.

Drafts for Writing Proficiency. The paper will entail two drafts, with comments from a student reviewer and me after the first draft. The first draft of the paper is worth 60 points. **An important note on what constitutes a first draft:** Your first draft must be written as well as you can possibly write the paper. It should be in the form that you would hand-in for a grade if we were not going through the draft process. The first draft must NOT be an outline or a partially-written paper. If your first draft reflects minimal effort, it will be handed back to you as unacceptable, with no comments. The final draft will be graded rigorously. Only if you do as good a job as possible on the initial draft will I be able to comment effectively on your writing style and content.

As part of your assignment, you will read and comment on one of your classmates' first drafts. You will be evaluated on the usefulness and depth of the comments you provide on the draft, and this will be part of your overall paper grade (125 of the 375 points for the paper are based on the review). More details of this student comment portion of the assignment are provided in the handout "Guidelines for Commenting on Papers in BI 416/516".

#### DUE DATES

Topic due: Wed. 1/20

Draft 1 due: Fri., 2/12

Student comments finished: Fri., 2/19

First drafts handed back with comments from Hooper: Wed. 2/24

Final draft due: Fri., 3/12

#### FORMAT AND GRADING

Length: 10 pages, **double-spaced** (I need room to write comments), 10 or 12 point font. Clarity, concision, and completeness count more than absolute length.

Grading: see the Grading Rubric provided.

References: All sources for ideas must be cited. You must draw on at least fifteen outside sources from the primary literature, not including web sites. Any references listed in the reference section must appear in the text, and vice versa. These references may include your textbook, other scientific books, or peer-reviewed scientific journal articles from the library or on reserve. "Peer-reviewed" simply means that other scientists have commented on the appropriateness of the methods and conclusions prior to publication. Proper citation style is expected and is illustrated below (see "Citation style"). If you have any questions about this, look in any recent issue of the journal *Ecology* for examples. While you can use web sites for additional information, they must be cited properly (see below) and web sites do not count towards the fifteen-source minimum. Very few web sites have any kind of peer-review process to ensure high standards of scientific methodology (of course, on-line scientific journals are okay). If you have questions about a particular site, contact me.

### **Citation style**

#### Within the text

When you are writing and use ideas that you gained from other sources, you need to acknowledge this by putting the authors' names and the date of their publication in the sentence. For example:

*Five interacting "state-factors" typically influence the process of soil formation. These are climate, organisms, topography, parent material, and time (Jenny 1980).*

or:

*MacArthur (1972) has suggested that there are more species where the environment is complex and therefore more easily subdivided.*

How you list the authors names in the text depends on how many authors there are:

One author (Jenny 1980)

Two authors (Smith and Jones 1897)

Three or more authors (Aber et al. 1989)

You should NOT include a page reference in the text citation for most journal articles (this will happen in the REFERENCES section at the end of your lab report). You MAY include a page number if you pulled a specific quote, fact, or other tidbit of knowledge from a large book.

#### Citation style in the "References" section at the end

All references must be listed in alphabetical order in the References section, using the following styles for the different types of literature:

#### **Journal article**

Aber, J. D., J. K. Nadelhoffer, P. A. Steudler, and J. M. Melillo. 1989. Nitrogen saturation in northern forest ecosystems - hypotheses and implications. *BioScience* 39: 378-386.

#### **Book**

Jenny, H. 1980. *Soil Genesis with Ecological Perspectives*. Springer-Verlag, New York, New York, USA.

**Edited book**

Mooney, H. A., W. E. Winner, and E. J. Pell, eds. 1993. *Response of Plants to Multiple Stresses*. Academic Press, San Diego.

**Chapter from an edited book**

Chapin, F. S., III. 1991. Effects of multiple environmental stresses on nutrient availability and use. Pages 67-88 in Mooney, H. A., W. E. Winner, and E. J. Pell, eds. *Response of Plants to Multiple Stresses*. Academic Press, San Diego.

**Web sites**

Author, date accessed, web site or article title, full web address

**A NOTE ON PLAGIARISM**

**Academic dishonesty will not be tolerated.** Assignments with plagiarism problems can result in no credit, failing the class, or expulsion from the university. Not knowing is not an excuse. As advanced undergraduates and graduate students, it is your responsibility to learn proper writing protocol. If you aren't sure now, it's a great time to find out. If you have any questions, please ask me and/or see Western's web sites: <http://www.library.wvu.edu/ref/plagiarism.html>.

## Guidelines for Commenting on Papers in BI 416/516

1. This will be an anonymous review. I will know who is reviewing whose paper, but you will not. I will copy everyone's papers/proposals, omitting names and assign them to you individually.
2. Read the paper thoroughly and make comments based on two major sources:
  - a. the grading rubric handed out on the first day of class (and available on the class web site). Use this to help structure your analysis of the paper's content, reasoning, organization, language, and presentation.
  - b. the article on writing suggestions handed out on the first day of class ("Notes on Writing Papers and Theses" by K. Lertzman). Use this as a guideline for grammar and sentence, paragraph, and paper structure (especially items 2, 5-10, 12-14, and 19).
3. Your comments should be in two forms:
  - a. Notes in the margin and between lines. These often address minor grammatical points, areas that need further clarification, and notes that refer the reader to any major comments;
  - b. Major comments. These must be written out in paragraph form on a separate sheet of paper, giving any details or descriptions necessary to help the author understand what changes you are suggesting. You must have at least THREE main points, the first one being something that the paper does well (i.e., a positive comment).
4. You do not need to assign a grade – just comment on the draft.
5. You will be graded on the thoroughness of your comments, including the extent to which you cover the guidelines in the grading rubric and the Lertzman article. Your review counts for 65 of the 250 points given for the paper assignment, so it is very important. I will be reading all the papers and comments as well, and will be looking for items that you may have missed.
6. **Due date for your paper comments:** Friday, February 19, 2010
7. Some suggestions for commenting:
  - a. Constructive criticism is good, but being harsh is not.
  - b. Look for at least one thing that is done well in the paper.
  - c. Review the grading rubric and Lertzman article before you read the paper, and refer to them when necessary.
  - d. Where grammar is awkward or writing is unclear, you don't need to rewrite entire sentences. Do note that there is a problem and what that problem is. You may suggest ways to correct it as well. You should refer the author to specific points in the rubric or Lertzman article.

## Grading Rubric for Papers in Ecosystem Ecology BI 416, Winter 2010

<b>CONTENT (25 %)</b>	
1. How appropriate is the topic in terms of the assignment? 2. How significant are the claims/ideas/purpose? 3. How sufficient is the context provided? 4. To what extent is the evidence/information: - relevant? - accurate? - necessary? - complete (i.e., sufficient to support your hypotheses/conclusions)?	
<b>REASONING (25 %)</b>	
1. What is the quality of the evidence? 2. To what extent are assumptions recognized/made explicit? 3. To what extent does the interpretation and analysis of evidence/information show: - depth of thinking? - logical reasoning? - complex reasoning? - accurate conclusions? - informed recommendations (if appropriate)?	
<b>ORGANIZATION (25 %)</b>	
1. How well does the overall organization accomplish the designated purpose? 2. To what extent does the ordering of information/evidence lead the reader through the text? (e.g., headings, transitions, flow) 3. How well do the parts connect with each other and the governing ideas? 4. How well-structured are paragraphs (e.g., starting with topic sentence which is then adequately developed in the following text)?	
<b>RHETORIC OF ECOLOGY (15 %)</b>	
1. To what extent is sufficient knowledge of the subject demonstrated? 2. To what extent does the use of specialized terms/concepts demonstrate understanding? 3. How appropriate to the discipline is the: - genre? - format? - language? - tone? 4. To what extent is there evidence of disciplinary ways of thinking and an appropriate sense of audience?	
<b>CONVENTIONS/PRESENTATION (10 %)</b>	
1. To what extent does the text reveal evidence of: - editing - proofreading 2. How accurately and completely is the information cited? 3. How appropriate is the documentation style?	
<b>OVERALL EVALUATION</b>	