BioES 261 Ecology and the Environment September 17, 1998
Writing-in-the-Majors Section Tze-Hei Yong

Research Proposal: Library Assignment

Your assignment is to choose one of the three questions that you wrote up for your Proposal Ideas, go to the library and find articles from the scientific literature that pertain to the question, and then write up a report on what you find.

The kind of information you are looking-for includes:

1)Basic natural history information on the study organism (e.g. distribution / range, habitat, nutritional mode, life cycle phenology);

2)Specific studies that have been done on the study organism (or similar organisms) on aspects ofecology related to your question;

3)Studies or theoretical papers related to the broader ecological concepts, but which do not involve your particular organism.

Places to start looking:
Gateway databases (e.g. Biosis, Biological and Agricultural Index, Agricola)
Latest issues of journals (e.g. Ecology, Conservation Biology, Science)
CU catalog (e.g. conference proceedings, books discussing a particular area of ecology)

If you don't know how to use these resources, now's your opportunity to learn! Ask the reference librarians -- that's what they're there for. The Gateway databases are particularly invaluable for anyone doing any kind of scholastic research.

The write-up for this assignment has three parts:

Part 1. Natural History of the organism

1. Summarize the information you have found about the organism's natural history. This information can come from a single paper, or from many. Sources may include primary and / or secondary literature, but if you can find it, primary literature sources that have the organism's natural history as their focus are better. Use the "References Cited" lists at the back of more current papers to find these original, often older, papers. List the citation information for all the sources you use for this section at the end of the summary.

2. After your summary, write a paragraph or two in which you discuss how this information affects your thinking about your question. Does the information answer your question for you? Does it suggest to you other interesting questions that could be asked? Does it suggest a different way you could go about answering your question than what you had originally been thinking?

Does it suggest that there is an important aspect of the system that you hadn't thought about, that you need to take into account?

Part 11. Report on a specific study that focuses on your organism (or a closely related one) and that looks at an aspect of the organism's ecology that is related to your question.

1.For this part, choose one paper from the primary literature that reports original research on an aspect of the organism's ecology related to your question. For example, take the question: "Do beavers preferentially cut some tree species or tree sizes over others? Which tree species and/or tree sizes are preferred?" For this section of the write-up, you could find a paper that reports on how plants respond after being cut by beavers, or perhaps a paper that describes the dam-building behavior of beavers, or perhaps a paper describing the nutritional requirements of beavers. These are all aspects of beaver ecology that may be related to how beavers decide which tree stems to cut.

2. Briefly summarize the paper -- what were the hypotheses they were testing, why did they think these questions were important, what were their methods and results, and what were their interpretations of their results in terms of the larger questions they were asking? Give the citation information for the paper at the end of the summary.

3. Discuss how this paper affected your thinking about your question, as in Part I.

Part III. Report on a paper related to the broader ecological concepts that are related to your question.

1.For this part, choose one paper from the primary literature that addresses the broader ecological concepts related to your question. The paper should not involve your particular study organism (nor a closely related one). The paper should either report original research or be an original theoretical paper. For example, for the beaver question, you could **find** specific studies or theoretical papers on food selection by herbivorous mammals, or perhaps selection of nesting material by birds.

2. Summarize the paper and include the citation, as described for Part H.

3. Discuss how the paper affected your thinking about your question.

Note: As you search for references, you will find many articles that are more or less related to your organism and your question. For this assignment, choose the papers that are most relevant in the categories above, to report on. Keep the other papers around, though, because you'll need them to write up your formal proposal (minimum six references).

* **What do I mean by primary literature? ***

Primary literature means papers (typically peer-reviewed) in which the scientist is reporting the results of his or her original research (or original theoretical thinking). Many of the articles in general science magazines (Science, Bioscience are written by science journalists who are summarizing the work done by scientists. These articles would thus be secondary literature. Review articles are also secondary literature.

* **Examples of standard citation format *** @journal, book, and chapter in edited book)

Lawton, J. H. 1983. Plant architecture and the diversity of phytophagous insects. Annual Review of Entomology 28:23-39.
Huston, M. A. 1994. Biological diversity: the coexistence of species on changing landscapes. Cambridge University Press, Cambridge, UK.
Powell, W. 1986. Enhancing parasitoid activity in crops. Pages 319-340 *in* **J.** Waage and D. Greathead, editors. Insect parasitoids. Academic Press, London, UK.

Limit your write-up to a total of 4-6 double-spaced, typed pages.

DEADLINE: Beginning of section, Thursday, 1 October.
METHOD OF GRADING: Numerical grade.