Library and Web Research Workshop
Forests through time and space: November 18, 2004

1. Discussion: Why do we conduct research? Why do we write? Why do we write about things that we research?

2. Kinds of web research:

    a. Google searches (or other general search engines): the most general, least complex, and least reliable way to search for and find information. Pitfalls and basic web techniques. Why falsification is, as usual, your friend.

    b. On-line taxonomic-based databases (more reliable than Google searches, more complex, typically provide useful and accurate general information).

        i. Tree of Life (http://tolweb.org/tree/phylogeny.html)

        ii. Animals only: Animal Diversity Web (http://animaldiversity.ummz.umich.edu/site/index.html)

    c. Searching the primary literature with TESC library electronic tools (your most important, reliable, and complex tools when conducting research):

        i. How to navigate to these tools

        ii. Journal indexing

            1. Web of Science, aka Science Citation Index

            2. Cambridge Scientific Abstracts: Several searchable databases, including "Biological Sciences" (primarily animals) **and** "Plant Sciences" in TESC electronic science resources

        iii. Full-text journal databases, a sampling

            1. JSTOR: great coverage, but never up-to-date. Most recent journal articles always 1 – 5 years old.

            2. BioOne

        iv. Interlibrary Loan

3. Three in-class workshops: hands-on learning and practice of research skills

Important features in Web of Science:
- General Search
- Marking your files
- Holdings
- Marked List (what to include; print and save options)
- Cited Reference Search

Additional important concepts and skills that you should have a grasp on:

- Primary literature
- Review paper
- Abstract
- Search techniques—What kinds of words produce good results? How do you hone your search if you've got too many results? How do you expand it if you've got too few?

Additional questions that you should be able to answer by the end of class today

- What is a peer-reviewed paper? Why is this the gold standard in the reporting of scientific results?
- What are the pros and cons of primary literature?
- What is the distinction between "Full-text journal databases" and "journal indexing" databases? When do you use one rather than the other?

3. Three workshops:

1. Follow my lead: With a partner, Search Web of Science for coatimundi. Everyone in the class will end up with the same list of references, plus pdf files for two articles from the primary literature.

2. Again with a partner, search Web of Science, plus any other web-based searchable database you wish, for pileated woodpecker. There is a lot written on this species, so you will quickly have to focus your question: what exactly are you trying to learn about pileated woodpeckers?. It will also help to quickly figure out the Latin name, and search by that. Every pair of students will generate a list of the five most relevant references (focussing on a particular question regarding pileated woodpeckers), plus download at least two pdf files for articles on that list (or have the call number for the journal that exists in TESC's library). Heather and Paul will be circulating to help you when you run into trouble.

3. Individually, using the list that you came with of the organism and three possible topics that you wish to research for your 2nd writing assignment, conduct searches on Web of Science, plus any other databases or search engines that we have discussed. By the end of class today, every individual should have focused their question for their paper, and have a reference list of at least five possible references, plus two full-text articles.

The bad news at the end of this workshop:

Once you have a good list of references, and your papers (either pdf files or hard-copies) are in hand, it's time to read the papers. Good luck—most scientific papers aren't well-written, but the more of them you read, the better able you will be to decipher academic-speak.