

# **Biol 475, Vegetation Description and Analysis**

## **Final Paper and Oral Presentation Guidelines**

### ***General information***

The final papers should be individual papers that each student writes. The oral presentations will be a summary of your individual papers and presented in a manner similar to what would be expected at a conference.

### ***Due date:***

December 18. I will not accept papers later than this because I have to grade them and report the grades by Dec.20.

### ***Content***

Each paper should contain these basic elements:

- Cover page
- Abstract
- Introduction
- Methods
- Results
- Discussion
- Conclusions
- Acknowledgments
- Literature Cited
- Figures
- Tables

All the papers should describe and analyze the vegetation of the Arboretum using the sorted table and the ordinations. Everyone will also have a topic that they will discuss within the framework of the basic description and analysis. This may require some additional methods, and results. How you organize this will depend on your topic.

Mike H. -- Vegetation map and GIS of the Arboretum

Jen -- Ordination

Anja -- Soils

Mike T. -- Forest analysis

Chris -- History of the arboretum and disturbance

Joni -- Boreal forest classification (I found the book by Rivas Martinez)

James -- Boreal forest cryptogams

**Common data and analyses:** Each paper should draw on the following materials describing the Arboretum vegetation. Each item is followed by the name of the person responsible for producing the products in a format suitable for publication and use by the rest of the class. The person responsible for these products might want to check with me make sure the products have all the necessary items on them before you distribute them to the class.

- (1) Site location map with all the releve locations (Mike Haye)
- (2) Species list with authors and 6 letter codes (Steve)
- (3) Site factors list with units and 6 letter codes (Steve)
- (4) Raw species data (Steve)
- (5) Raw site factor data (Steve)
- (6) Ordinations, Axes 1 and 2
  - Polar Ordination (Mike Haye)
  - DCA (Jen)
  - CCA (Chris) See special instructions on list of site factors
  - NMS (James)
- (7) DCA ordinations, axes 1 and 3 (Jen)
- (8) DCA species ordination, axes 1 and 2 (Jen)
- (9) DCA plot ordinations with cover abundance for 28 species (Joni/Anja) See ordination exercise for list of species.
- (10) DCA plot ordination with 48 environmental variables (Joni/Anja)
- (11) 6 Dendrograms (everybody)
- (12) Final sorted table (everybody, or we may select the best one for everyone to use)

**Vegetation unit descriptions:** All papers should contain the sorted table and a summary of the site factors for each vegetation unit, listing the mean values for the various site factors. Your results should include a brief description of the vegetation units that accompany the sorted table. The description should include the differential taxa, and common species in the unit. It should also include a summary narrative describing the types of terrain and environment in which the vegetation type is found. You might want to consult with other members of the class that sampled units that you are unfamiliar with.

**Vegetation analysis:** The heart of the analysis will be the ordinations. Describe what the ordination reveals about the controlling environmental variables. If you are using DCA, describe the axes and what they mean (sd units). You will want to label the axes with the variables showing the major trends of the highly correlated environmental variables for the given axis. Additional analyses such as direct gradient analysis may be appropriate and welcome. The forest analysis will also be an important part of this in some papers and should include tables showing average basal area, densities, tree heights, cover values, etc. for the various vegetation units.

### ***Figures:***

The figures should all have captions at the bottom of the figure, so that someone could understand the figure if it were separated from the paper. All symbols and abbreviations

should have explanations, and all axes should be labeled with units where appropriate. All the ordination diagrams should be prepared so that they have clear titles and clear legends and they are easy to read. Several ordinations can be grouped appropriately on a single page to save paper. **Photos** of the various vegetation units would be a very good addition to the descriptions of the vegetation units.

### ***Tables:***

The tables should all have captions at the top of the table. All items in the tables should have units and full names attached to them. The table should be clearly understood if it were separated from the paper

### ***Length:***

No more than 15 double-spaced pages Figures, tables and literature cited are not included in this. This means that the methods will have to be thorough but brief. You can cite references that explain the techniques without going into details. It also means you have to be concise with no additional words than are necessary. I am a stickler for succinct language. This is not the place for poetic language or lengthy discussions. Measure every word and see if it is necessary.

### ***Oral presentations***

The oral presentation is worth 100 points. It will be graded according to the following criteria:

Topic appropriate for the class (10 points)

Is the topic well defined? (20 points)

Are the scientific aspects accurate? (20 points)

Was the topic interesting? (20 points)

Are the references appropriate and adequate? (5 points)

Overheads and graphics (10 points) Clear, easy to read. Well explained

Organization (10 points) Introduction shows where the talk is going. Body of report follows the outline. Were the major points clearly presented? Summary at end?

Clarity of presentation (5 points) Demeanor of speaker. Speaking to the audience. Clear voice. Lack of disrupting gestures or phrases

### ***Papers:***

The papers are worth 200 points. I will give an incomplete to anyone not turning in a good paper, and you will have an opportunity to rewrite it and edit it until it is good or until you are satisfied with your grade. The papers should all be done with a word processor so they can be easily edited.

#### **Title page (3 points)**

Is the title appropriate?

Authors, affiliation and date included?

#### **Abstract (10 points)**

Concise, no more than 300 words. Includes major conclusions from the paper. Includes key data in numeric format.

**Introduction (20 points)**

Introduces the main topic of the paper, clearly defines the focus. Presents key background information. Presents the major topics and outlines the contents of the paper

**Methods (20 points)**

All the papers should include the following methods: releve sampling approach, sorted table analysis, and ordination. Sufficient information so that reader knows what methods were employed. Properly cited methods.

**Results (30 points)**

Results should include the sorted table, and the ordinations. Are the results presented with enough additional information for the reader to understand what it is he/she is supposed to get from the results. Full discussion of the results should occur in the discussion. Vegetation table explained sufficiently? Are the vegetation units described adequately with site factor information? Are the ordinations presented with sufficient information to understand the major trends depicted? Other results presented adequately?

**Discussion (40 points)**

The discussion should present the major significance of the results, and compare the information with results from other studies. What new information was gained from this study? What additional research is suggested? Weaknesses of the study should be pointed out, but not dwelled on. Scientifically accurate? Up to date? Interesting? Thorough treatment of subject?

**Conclusions (20 points)**

Presents the major take-home points. Does not present new information that was not discussed in the body of the paper. Are the conclusions logically derived from the discussion? Presents the major points in same order as in the abstract and introduction.

**Acknowledgments (5 points)**

**Literature cited (5 points)**

Are references up to date? Correctly cited? Appropriate for the paper? Relevant? From appropriate journals or books?

**Organization (10 points)**

Use of headings and subheadings is adequate and appropriate. Information flows in a logical sequence.

**Graphics and tables (20 points)**

Appropriate? Easy to read, with clear legends that fully explain the figure.

**Format (2 points)**

Follows *Ecology*.

Format for literature in bibliography and in text correct?

Figure and table format correct.

**Grammar and spelling (15 points)**

Spelling. Grammar.