Final Project Proposal (Due Wednesday, October 30, 2024)

FW 599: Multivariate Analysis of Ecological Data

Instructions

FW 599: Multivariate Analysis of Ecological Data is a skills-based course, whereby students will learn to apply various multivariate statistical techniques to complex data sets. In lieu of a final exam, students will be required to submit a final report in the form of a peer-reviewed "journal article." This project proposal is intended to help guide you in this process. Your proposal will provide the foundation for your final analysis and should demonstrate that you have a clear understanding of the ecological questions driving your work, as well as the potential statistical methods you will use to address them.

Please submit a two-page (single spaced) project proposal in the form of a Word document or Markdown-generated *.pdf file by Wednesday, October 30th. The proposal should include the following sections:

1. **Background and Justification**: Provide some context for your study system, including details about the ecological setting and key drivers of interest. What hypothesis(es) and/or study questions are you planning to answer using these data? Are there any uncertainties that need to be addressed?
2. **Objectives**: Provide a list of 2 or 3 clear objectives that directly address your project goal(s). These objectives should be ecological NOT methodological. For example, an objective might be to "determine the influence of environmental gradients on species assemblages across sites," rather than "apply a PCA to species abundance data."
3. **Methods**: Describe the analytical methods you plan to use to address each of your objectives. I know we haven't gotten to functional methods like RDA/CCA, PERMANOVA, and classification/regression trees yet, but do your best to anticipate which methods you think will be most appropriate based on your understanding so far.
4. **Expected Outcomes**: Predict what you expect to find from your analysis. Be realistic but thoughtful in considering the results that could emerge based on your knowledge of the system.
5. **Broader Implications**: Discuss the broader impact of your study. How will your findings contribute to the field of ecology, inform conservation practices, or guide management decisions? Think beyond the immediate study and consider how your results may apply to larger ecological or environmental questions.
6. **Literature Cited**: This section is not required and does not count toward the 2-page maximum. Please include full references if you cite any journal articles or reports in your proposal.