## Teaching Notes – Lichens in Diverse Landscapes

NRM351 – Forest Ecology

### By ***Jane Dell***

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**Course Information**

Department: Geosciences and Natural Resources

Level: **Upper Undergraduate**

Course type: **Lab and Lecture**

Students: **Majors – Natural Resource Conservation and Management**

Number of Students: 36

**Module Information**

Original Module Name: Lichens in Diverse Landscapes

Files associated: Project Introduction, Data Collection Protocol, Data Analysis Assignment, Powerpoint on Lessons Learned

Modification Learning Goals:

* Data collection and analysis (Modules 2 and 3 from original protocol)

**Teaching Notes**

Suggestions for this section

· What did you change and why? I used this project as an opportunity for my students to learn how to collect data using a standardized protocol and then analyze data, including interpretation and figure creation. I taught and used Microsoft Excel instead of Google Sheets as posted in the original materials. This better aligned with our program curriculum.

· How did the activity go? Data collection went well and was enjoyed by students. I made collection kits for them and they collected data independently due to Covid restrictions. Data protocols were easy to follow and the training video was excellent. Upload to iNaturalist was clunky and students commented that it was problematic.

· What went well and why? I was happy with their formulation of relevant hypotheses and testing of those hypotheses using class and NEON data. However, this was predicated by a pause in the project where I did a full week of statistical analysis and interpretation of test outputs in Excel. I did not use Google This allowed students to have a better understanding

· What went wrong and why? Next time I would skip the individual upload to iNaturalist. Instead we explored analysis of the NEON lichen data which allowed students to expand analyses to a broader spatial scale.

· What was the prep like? Easy to amend from original materials to best fit my students needs.

· How much time went into prep? 5-10 hours

· Did you have to do any prep (i.e. grow cultures, grow seeds, order supplies) ahead of implementation? Yes, I made the field sampling grids and dbh tapes for them. I also amended the data analysis module to use Excel and

· Would you do this activity again? Absolutely.

· What would you change in the future? Not use iNaturalist.

· What do you wish you’d known before you ran the activity? The exact protocols for the NEON lichen data. They are much different than the project protocols and led to a bit of confusion for students.

· Is there anything else you would like to make note of? Materials are very well organized and project is easy to implement for in-person or distance learning.

· How does this activity fit in your overall course curriculum? It blended in perfectly and provided a shared research experience for the entire class.

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