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Peer reviewing: Stephen and Parker's STAT 512 project

I. Introduction:

• Give a brief background of the research problem and how the data were collected.

This is well expressed; we would add to the last line of competition the species of interest.

• Clearly outline the question(s) of interest you will address with the statistical analysis. The more specific you define the question of interest here, the easier the rest of the analysis is.

What is the relationship between climate/competition and WBP seedling establishment, measured by individual growth rate?

This is clearly outlined, they chose the RQ that addresses seedling establishment based on climate factors and competitors. However, this is to be determined.

II. Statistical Procedures Used

• Describe the response variable and explanatory variables

The response variable is the individual growth rate. It is not yet stated if the result will be expressed by unit or by individual trees.

The explanatory variables are clearly defined; however, we couldn't understand how the variables were chosen after looking at the data and how they were combined or transformed, for example, page 5 last chapter.

The units measured for growth rate as cm/year(?) should probably be included in the graphs or somewhere.

• Describe how you plotted the data [Include pertinent plots and create figure captions for your plots]

The box plots show the log transformation effect on variance. The pairs plot can be saved full size and added so it's not compressed. The correlation plot is great, but it needs the figure caption.

• Describe the statistical procedures used to complete the analysis (e.g. two-sample t-test, analysis of variance, extra sum-of-squares F-test, etc). Be specific about which procedures (and parameters in models) are answering which questions of interest (if there are multiple questions).
• Report results of any informal statistical procedures used to get to the final model.

The model selection process is addressed but should be stated more clearly as well as the parameters in models. Backwards selection is being done by AIC.

• Describe how you assessed assumptions, what your conclusions regarding the assumptions are, and justify your conclusions. Refer to the appropriate plots and include pertinent plots that are in addition to EDA plots (QQ-plots, residual plots, etc.)

We think that the four EDA plots would be useful to visualize the data and assess assumptions. The final model should have its plot as well.

III. Summary of Statistical Findings

IV. Scope of Inference

(a) Were the units randomly selected from some larger population? (i.e. What, if any, larger population can you infer the results to?)

The scope of inference can be more specific and complete.

(b) Were the units randomly assigned to groups? (i.e. Are cause-and-effect statements justified?)

This is not clear as we're not sure about their definition of larger population.

• OTHER:
In general, this is a very interesting article you chose. The way the ideas are expressed and

what the proposed analysis is are very clear it is only the details that need tuning and a completed analysis.

Critique: What is the approach to this project? Is it to repeat the statistical methods in the original article? Or to address the original research question and compare your results?

Appendix: Include