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Analysis of Environmental Data Lecture

Week 4 Reading Questions

September 26, 2021

Worked with Julia Vineyard

Brown Creeper abundance explained by late-successional forest percent

1.

a. The extent if late-successional forest

b. Continuous/ ratio scale

2.

a. Brown creeper abundance

b. Continuous/ ratio scale

3. Because both variables are continuous/ratio, there are many possible options to summarize and model the data. For example, box plots, linear regression, and other models would all be appropriate choices.

Brown Creeper presence/ absence explained total basal area (a measure of tree cover)

1.

a. Total basal area

b. Continuous/ ratio scale

2.

a. Brown creeper occurrence

b. Binary/ Qualitative

3. Binary data restricts the type of model being used because there are only 2 output variables. For example, a linear regression wouldn’t be good fit because there are only 2 outcome variables.

4. What are the pros and cons of the Ricker model?

Pros:

* Mechanistic/have a mechanistic relationship to an environmental process
* Good to model relationships of biological processes

Cons:

* In some cases, mechanistic models don’t fit well
* Other functions could describe the pattern better

What are the pros and cons of the quadratic model?

Pros:

* Phenomenological/when the deterministic model is formed from the patterns observed in the data (not on underlying theory)
* May fit the pattern better than mechanistic models

Cons

* No underlying environmental theory tied to the model
* Lacking in an explicit mechanistic interpretation