Andrew Gordon

Professor Mike Nelson

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Week 4 Reading Questions

Q1

1. Brown Creeper Abundance
2. The predictor variable for this model would be percentage of land cover dominated by late successional forest
3. numeric and continuous.
4. Brown Creeper Presence/Absence
5. The predictor variable for this model would be the total basal area of the individual plot
6. Numeric and discrete

Q2

1. Brown Creeper Abundance
   1. The response variable would be the abundance or frequency of brown creepers.
   2. Numeric and continuous
2. Brown Creeper Presence/Absence
3. The response variable would be the presence or absence of brown creepers in the plot.
4. Numeric and Discrete

Q3

The Brown creeper abundance model was limited because the data scale was continuous. This scatterplot shows the abundance of brown creepers on a continuous scale, most likely to be percentage of total vegetation in the area. Different datapoints can overlap each other, making it hard to visualize how many total plots there are. This could be easier to visualize if the data was shown in a histogram/bar chart.

The brown creeper presence/absence model was limited because its response variable was discrete and binomial. In this type of model, only a single individual needs to be found in the plot for it to be classified as present. The data scale for the response variable cannot inform us about how many brown creepers were actually found in the plot.

Q4

Ricker Model

PRO:

* useful for representing density-dependent fecundity that reaches a peak and gradually declines
* mechanistic interpretation
* flexible, with finite limits

CON:

* assumes that the data reaches a peak and declines rather than levelling out

Quadratic Model

PRO:

* the most common and familiar functions used
* easy to interpret
* flexible patterns

CON:

* hard to justify mechanistically because the parameters do not come from environmental theory
* likely for data to be overfit with high-order polynomials