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Analysis of Environmental Data

Week 4 Reading Questions

1. Late successional forest percentage and total basal area are the predictor variables of the models. They both would be considered continuous variables and on a ratio scale.

2. Brown creeper relative abundance is the dependent variable in the first model, which is a continuous variable on a ratio scale. Brown creeper presence/absence is the dependent variable in the second model which is a discrete categorical variable.

3. For the first example, the choice of a linear model was influenced by the fact that both predictor and response variables were continuous, thus creating the possibility of a linear relationship between the two variables. In the second example, the use of a logistic model was necessary due to the constraints of the binary, categorical response variable (presence/absence).

4. Ricker model is a mechanistic model that follows the transition from increasing to decreasing recruitment based on the effects of density dependent interactions. It's good because it is based on a known mechanism that can be interpreted in the context of whatever environment your data are related to. The cons of this model are that you might not always be able to interpret the mechanism as related to your data in a logical manner.

   The quadratic model is good because it fit the data better than the mechanistic models, but the cons are that the model is simply based on the patterns present in the given data which doesn't allow you to make inferences into the mechanism behind the observed patterns.