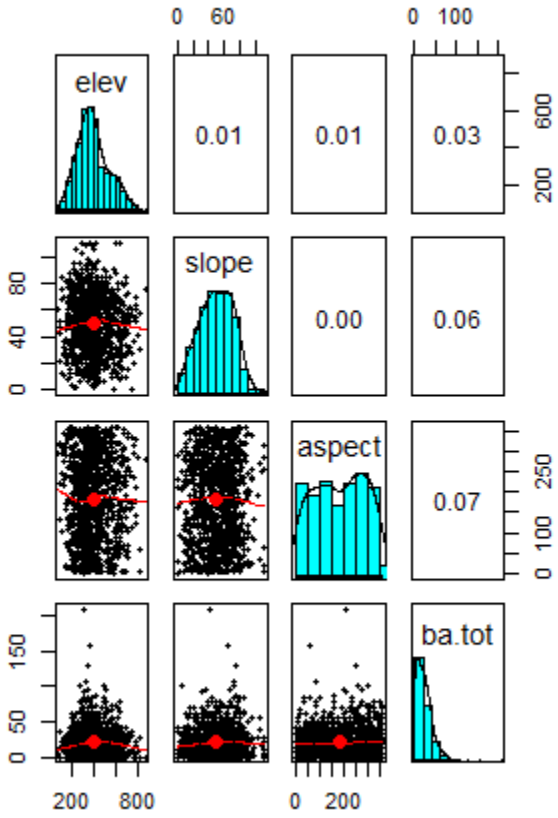
Matthew Jusino

Lab 3

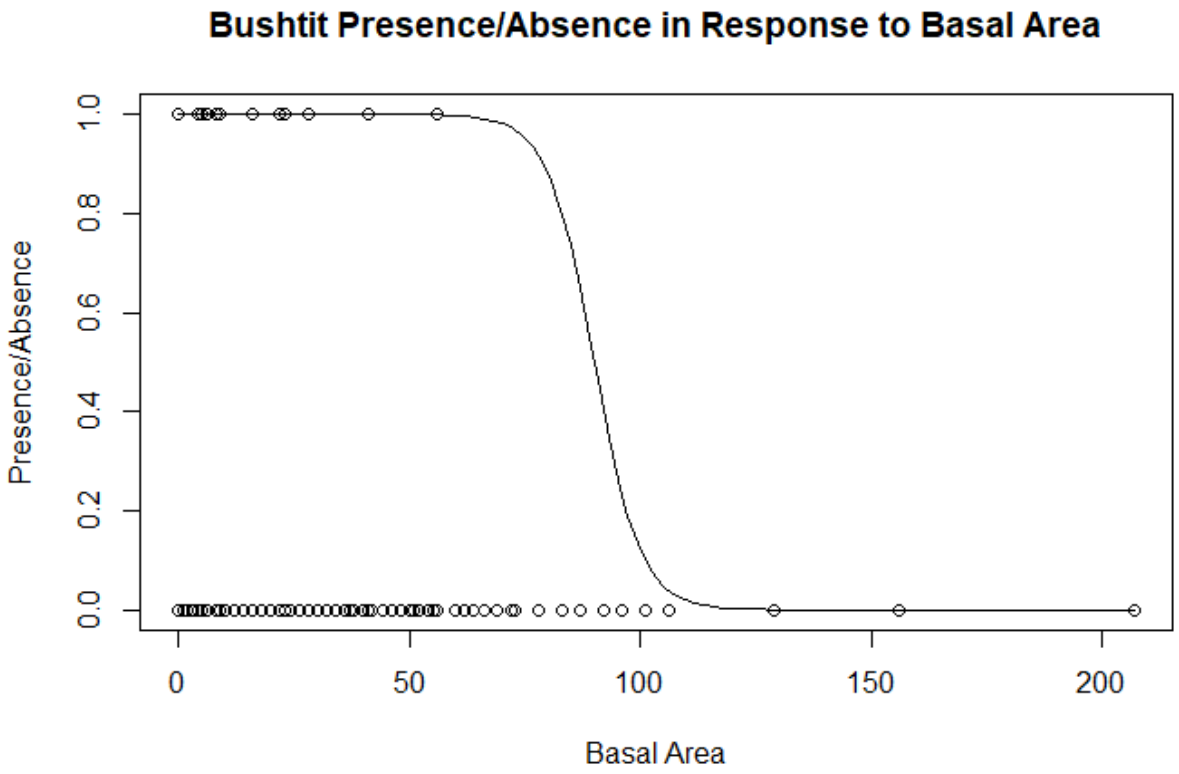
- **Q5 (1 pt.):** What is basal area, and how is it measured?

Basal area is the amount of tree trunks in a study area, usually expressed as sq ft of tree at breast height per acre. Measured using the cross-sectional area of each tree in the area to determine an average for the study area.

- **Q2 (2 pts.):** Include a figure of your terrain/basal area pairplot.



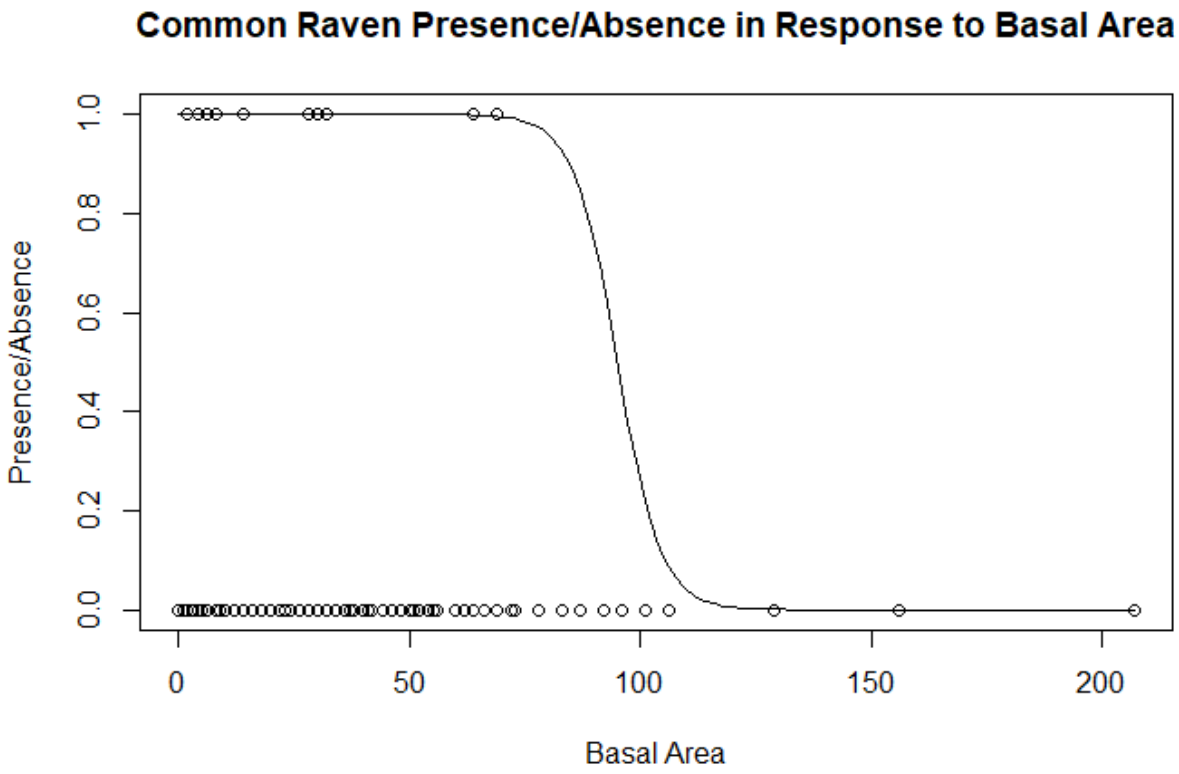
- **Q3 (1 pt.):** Include a figure of your logistic function plot. Your figure must include the name of the bird species, appropriate title, axes, etc.



- **Q4 (3 pts.):** Qualitatively describe the bird's presence/absence patterns in terms of basal area (or your other chosen predictor). Your answer should make reference to your fitted logistic model plot. Some questions you might consider are:
    - Does the bird species seem to prefer areas with high or low tree cover?
    - Does the bird species prefer low or high elevations? (for example, if you used elevation instead of basal area)
    - Does a logistic model seem like a good fit?

The bushtit appears to prefer areas with a lower tree cover. There were no bushtits present in areas with more than approximately 60 sq ft of trees per acre. The logistical model doesn't really seem like a good fit, since there are many points not along the line in the areas with lower basal area.

- **Q5 (1 pt.):** Include a figure of your logistic function plot. Your figure must include the name of the bird species, appropriate title, axes, etc.



- **Q6 (3 pts.):** Qualitatively describe the bird's presence/absence patterns in terms of basal area (or your other chosen predictor). Your answer should make reference to your fitted logistic model plot. Some questions you might consider are:
    - Does the bird species seem to prefer areas with high or low tree cover?
    - Does the bird species prefer low or high elevations? (for example, if you used elevation instead of basal area)
    - Does a logistic model seem like a good fit?

The ravens also appear to prefer areas with a lower tree cover. There were no ravens present in areas with more than approximately 75 sq ft of trees per acre. The logistical model also doesn't really seem like a good fit here, as there are many points not along the line in the areas with lower basal area, and even fewer along the line than with the bushtits.

- **Q7 (1 pt.):** How many **total number of Gray Jays** were observed in all of the sampling sites.

181 gray jays were observed across all sampling sites.

- **Q8 (2 pts.):** Show the R code you used to perform the calculation.

```
sum(dat_all$GRJA)
```

- **Q9 (1 pt.):** Calculate the **total number of sampling sites** in which Gray Jays were observed.

110 sites were observed to have at least a single gray jay present at time of sampling.

- **Q10 (2 pts.):** Include the R code you used to perform the presence/absence calculation.

```
jay_vec = dat_all$GRJA > 0
sum(jay_vec)
```