1.

```
#install and require "here" package
install.packages("here")
require(here)

#read files and assign variable to each dataframe
dat_bird = read.csv(here("data", "bird.sta.csv"))
dat_habitat = read.csv(here("data", "hab.sta.csv"))

#create histogram of Song Sparrow counts
hist(dat_bird$SOSP,
        #label for x-axis
        xlab = "Number of Birds Counted",
                #sets 7 breaks in the histogram
                breaks = 0:7 - .5,
                        #main histogram title
                        main = "Song Sparrow Counts\nOllie Murphy",
                                #set column color using rgb function-- it's pink :)
                                col =
                                        rgb(255, 209, 220, maxColor = 255))

#create pair plot of elevation, slope, and aspect
pairs(
        #define subset to be plotted
        dat_habitat[ c("elev", "slope", "aspect")],
                #main plot title
                main = "Pairplot of Habitat Terrain Characteristics\n by Pete Crump",
                        #set point color and transparency
                        col =
                                adjustcolor(col = "black", alpha.f = 0.7)
                        )
```

## Pairplot of Habitat Terrain Characteristics
## by Pete Crump
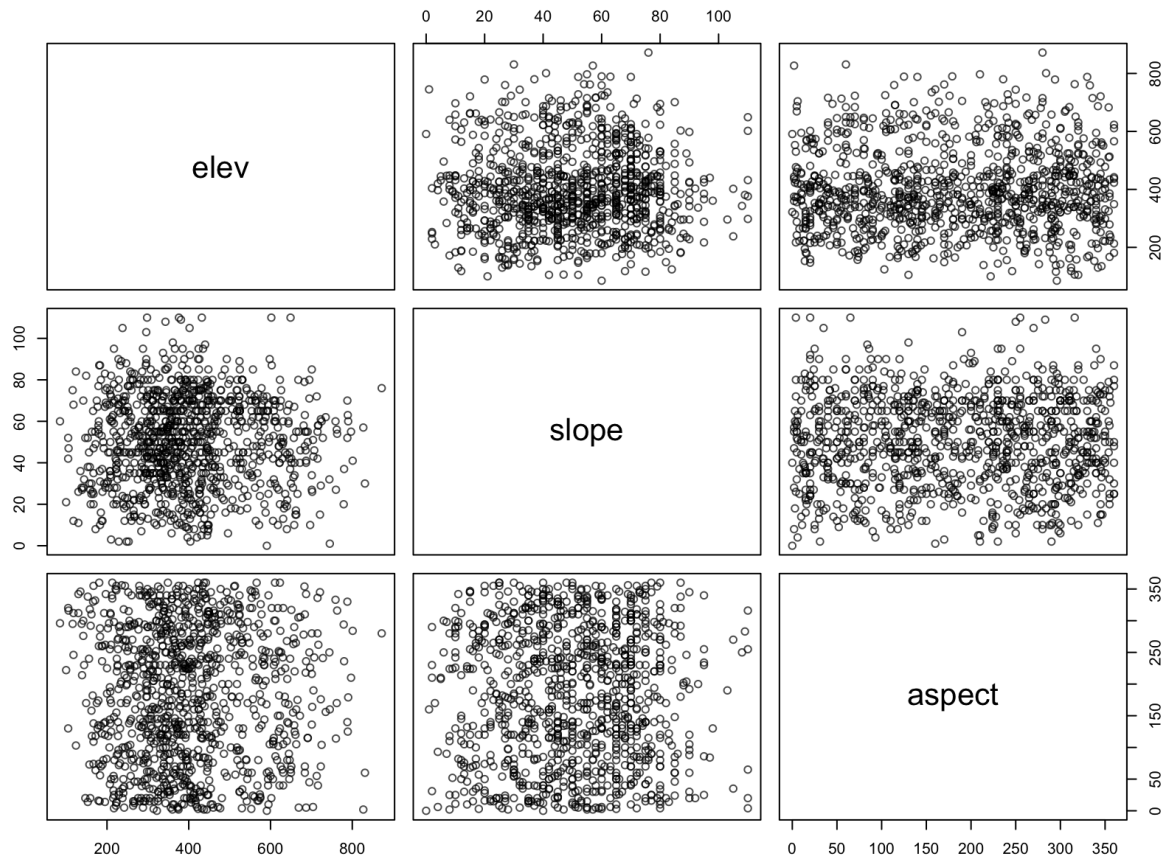


2.

- ○ Describe what kinds of patterns you see in the pair plot panels.
    - ■ Working clockwise, starting at the top center:
        - ● the points seem to be clustered towards the bottom left of the plot.
        - ● Points are distributed fairly evenly by aspect, but are denser at lower elevations between 200 - 400 m
        - ● Similar to aspect/elevation, aspect slope is evenly distributed across the aspect axis, and are denser in the bottom ¾ of the plot, with the center quartiles being the densest
        - ● Inverse of the third plot: points are evenly distributed across the aspect axis, and clustered in the center of the slope axis
        - ● Inverse of the second plot: points are distributed across aspect and clustered around 400 m elevation, with few points above 600
        - ● Finally, inverse of first plot: again, points are largely clustered on the left side of the plot, and slightly more dense towards the top
- ○ Do any of the variables seem to be related?

- It seems that slope and elevation may be positively related at least somewhat; however, aspect does not appear to relate to either of the other variables.

**Song Sparrow Counts**
**Ollie Murphy**
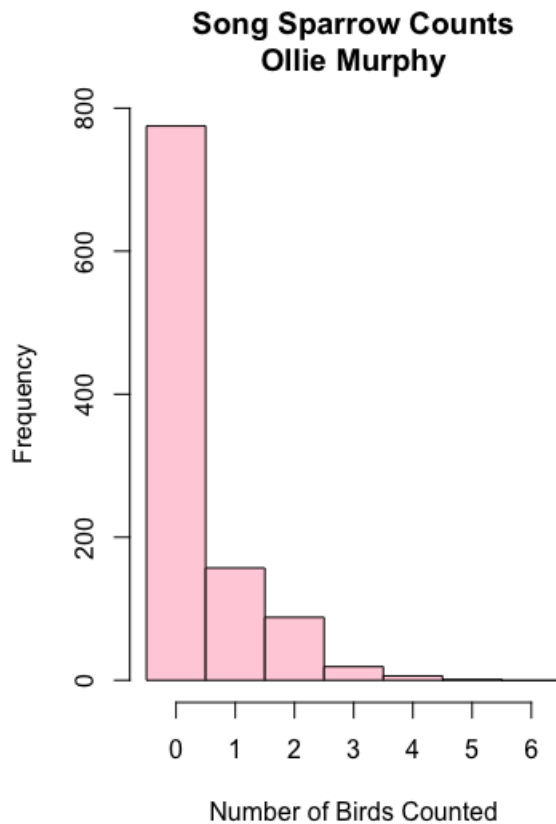


3.

- ○ What does the histogram show?
  - ■ Are there lots of sites in which many birds were observed?
    - No, there are not a lot of sites where many birds are observed. At close to 800 sites there were 0 Song Sparrows observed and there is a very small number of sites where 4 or 5 birds were observed.
  - ■ Are there more sites in which zero birds were observed?
    - There is a noticeable difference in the bars showing that at most sites there were 0 Song Sparrows observed. There are almost 800 no-observance sites, as opposed to almost 200 where 1 bird was observed, and around 100 where two were observed. Sites where 3 or more were observed total no more than 50.