

Anthropogenic Noise Disturbance on Harbor Seals

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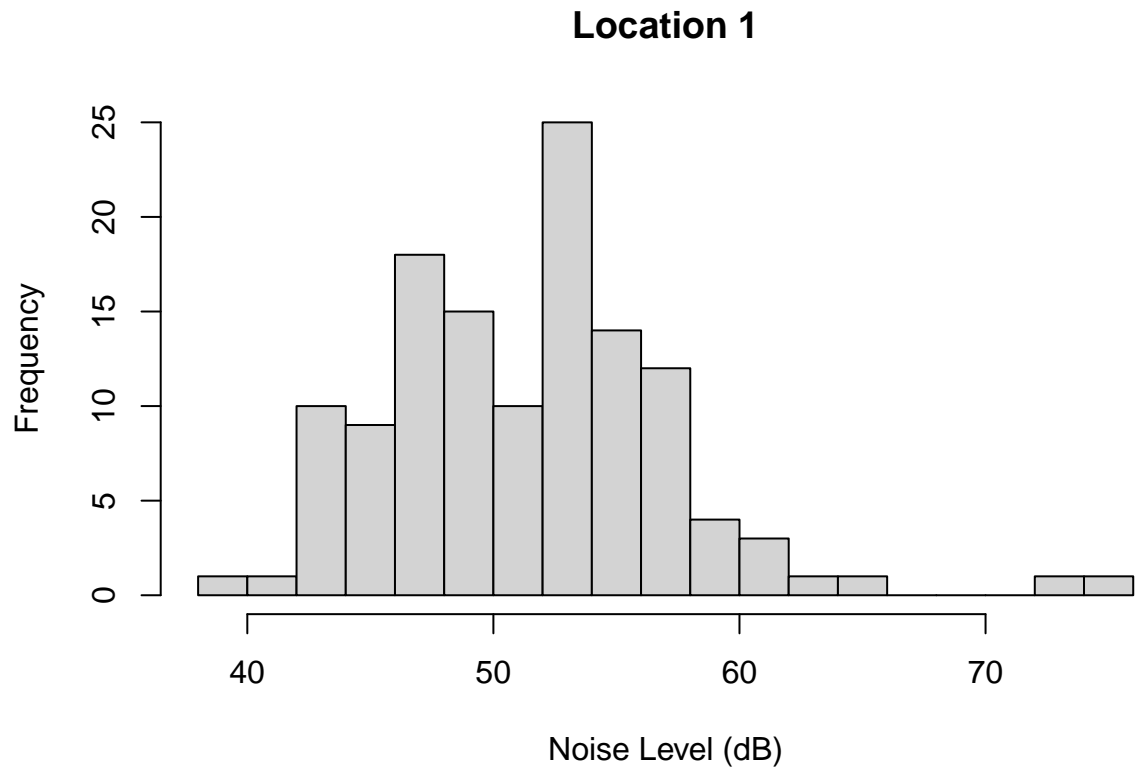
Waterfront-Marina GLM analysis

In this markdown I will:

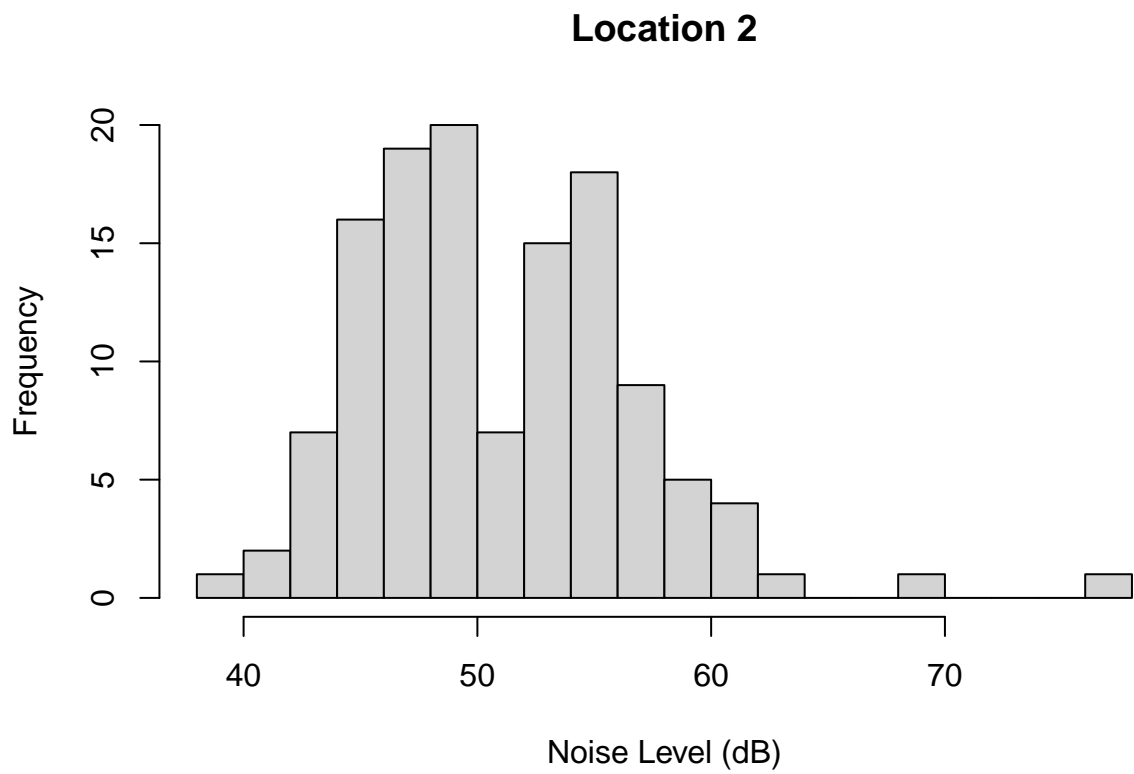
1. Check whether the two waterfront locations have significantly different noise levels.
2. Combine the Waterfront and Marina Models and check for collinearity.

Check Details in Waterfront Location

Check t-test Assumptions



Normal Distribution?



Both have relatively normal distributions

```
# Retrieve data
m.data<-read.csv("../data/m.data.csv")
w.data<-read.csv("../data/w.data.csv")

# Location 1
var(w.data$noise[w.data$location == 1])
```

Equal Variance?

```
## [1] 33.84875
```

```
# Location 2
var(w.data$noise[w.data$location == 2])
```

```
## [1] 35.51674
```

Run t-test Between Waterfront Locations

```
##
## Welch Two Sample t-test
##
## data: w.data$noise[w.data$location == 1] and w.data$noise[w.data$location == 2]
## t = 0.72843, df = 249.86, p-value = 0.467
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
## -0.920837 2.001789
## sample estimates:
## mean of x mean of y
## 51.48571 50.94524
```

Now that I know the two waterfront locations don't have significantly different noise levels, I can merge the two locations by: * Summing the number of seals hauled-out * Combining the average noise level

Merge Waterfront and Marina Models

Check Collinearity

```
##      noise month tide time j.date
## noise      1    NA  NA  NA     NA
## month      NA     1  NA  NA     NA
## tide       NA    NA   1  NA     NA
## time       NA    NA  NA   1     NA
## j.date     NA    NA  NA  NA     1
```

There appears to be no correlation between the independent variables, so there is no worry of collinearity.