



# Biodiversity for the National Parks

Garrett Corless

# Data Overview

## "species\_info.csv"

- Number of species: 5824
- Species Type
  - Mammal
  - Bird
  - Reptile
  - Amphibian
  - Fish
  - Vascular Plant
  - Nonvascular Plant
- Conservation Status
  - Species of Concern
  - Endangered
  - Threatened
  - In Recovery
  - No Intervention

## "observations.csv"

- Park Location
- Species Observed
- Number of Observations

# Likelihood of Endangerment Based on Category: Chi Squared Test

## Mammal vs. Bird

Category	Protected	Unprotected
Mammal	176	38
Bird	442	79

p-value = 0.4459

No significant difference

## Mammal vs. Reptile

Category	Protected	Unprotected
Mammal	176	38
Reptile	74	5

p-value = 0.0234

Significant difference

Based on the significance findings, it seems mammals are the most likely to be endangered. Conservationists should focus their efforts on reducing this proportion.

# Observing Foot and Mouth Disease Afflicting Sheep in National Parks

- Current Afflicted Percent: 15%
- Minimal Detectable Effect: 33%
  - $15\% - 10\% = 5\%$
  - $5\% / 15\% = .33$
- Sample Size: 520
- Number of Weeks Necessary:
  - Bryce National Park
    - $520 / 250 \approx 2$  weeks
  - Yellowstone National Park
    - $520/507 \approx 1$  week



