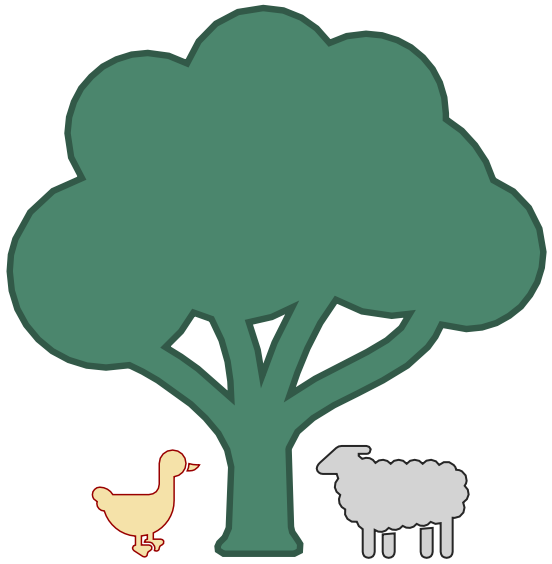


Biodiversity *for the* National Parks

Species Info

Data about different species within our National Parks

- Contains a list of animals with the following information:
  - Scientific name
  - List of common names
  - Category of animal (mammal, bird, etc.)
  - Conservation status (if available)
- From this, we are able to view the number of endangered species broken down by category
  - Furthermore, we can observe possible relationships between the categories to determine whether some types of animals are more or less likely to become endangered

Significance Calculations

Are certain types of species more likely to be endangered?

- After running a chi-squared test between mammals and birds, the p-value was determined to be 0.688
  - This difference is insignificant, as the p-value is greater than 0.05
  - While it appears that mammals are more likely to be endangered than birds, the results of the chi-squared test prove that this was just chance
- Maybe that's not the case for every category of species…
- Running a chi-squared test between reptiles and mammals results in a p-value of 0.038
  - This is significant! It is not chance that reptiles are less likely to be endangered than mammals
  - Recommendations to come

Recommendations

For concerned conservationists, regarding endangered species

- Further research needs to be done to see which species are more at risk of endangerment, and why
  - Knowing that reptiles are less likely to be endangered than mammals, what insights can we gleam from the current protection methods in place, and how can we improve upon them?
  - Including research into environmental factors, such as climate (and climate change) and natural predators that could play a role
  - How have humans affected the conservation statuses of these animals
- Are other categories of species more likely than the rest to become endangered?
  - What can we do, as a society, to better protect them?

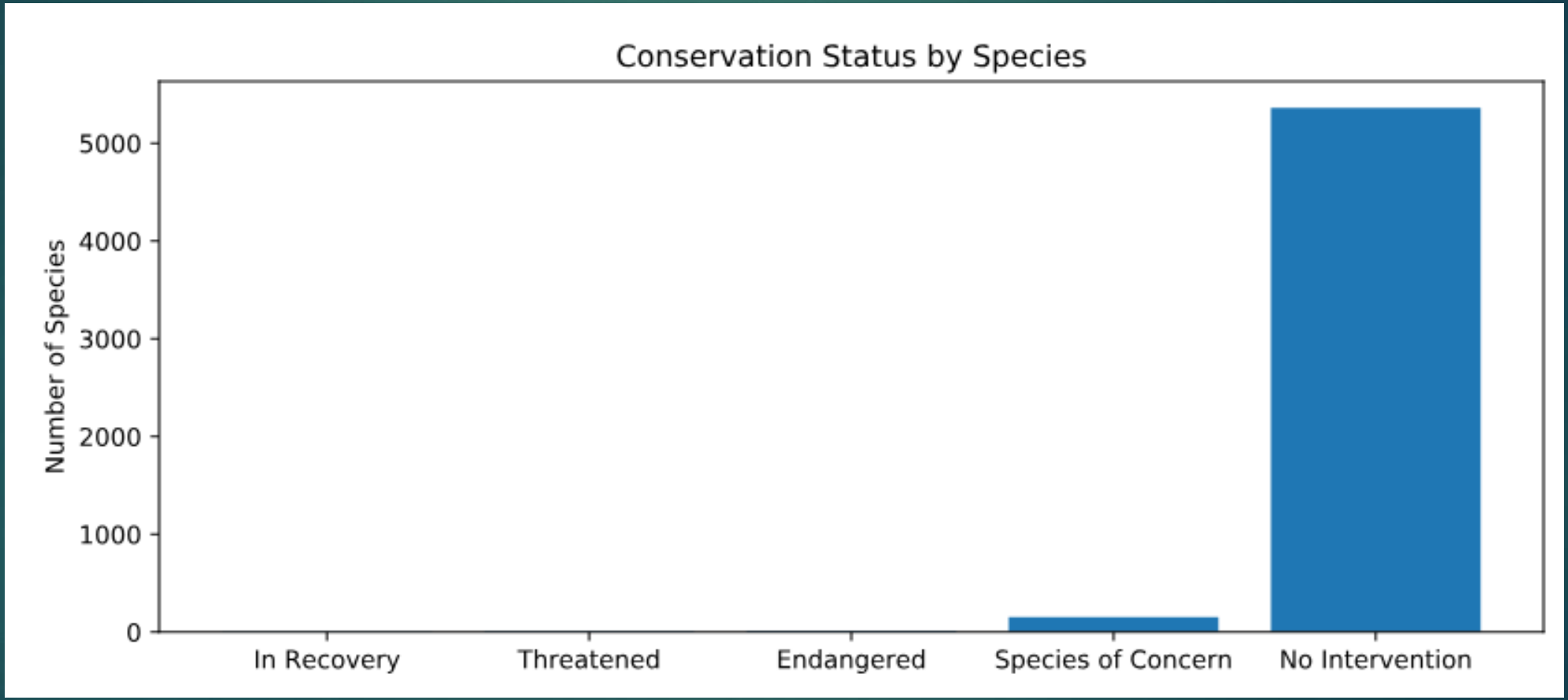
Sample Size Determination

Foot and mouth disease study

- We used the recorded information from Bryce National Park's previous year as the baseline, at 15%
- Yellowstone would like to detect reductions of at least 5%, which makes our minimum detectable effect 5/15, or 33%
- We decided it would be best to plan for the standard level of statistical significance, 90%
- This led us to the sample size, per variant, of 890 sheep
  - For Yellowstone, which has 507 sheep sightings a week, scientists would need to observe the sheep for about 12 days in order to achieve that sample size

Graphs

Conservation Status by Species



Graphs, continued

Observations of Sheep per Week