Introduction to Data Analysis - Biodiversity of National Parks Presentation

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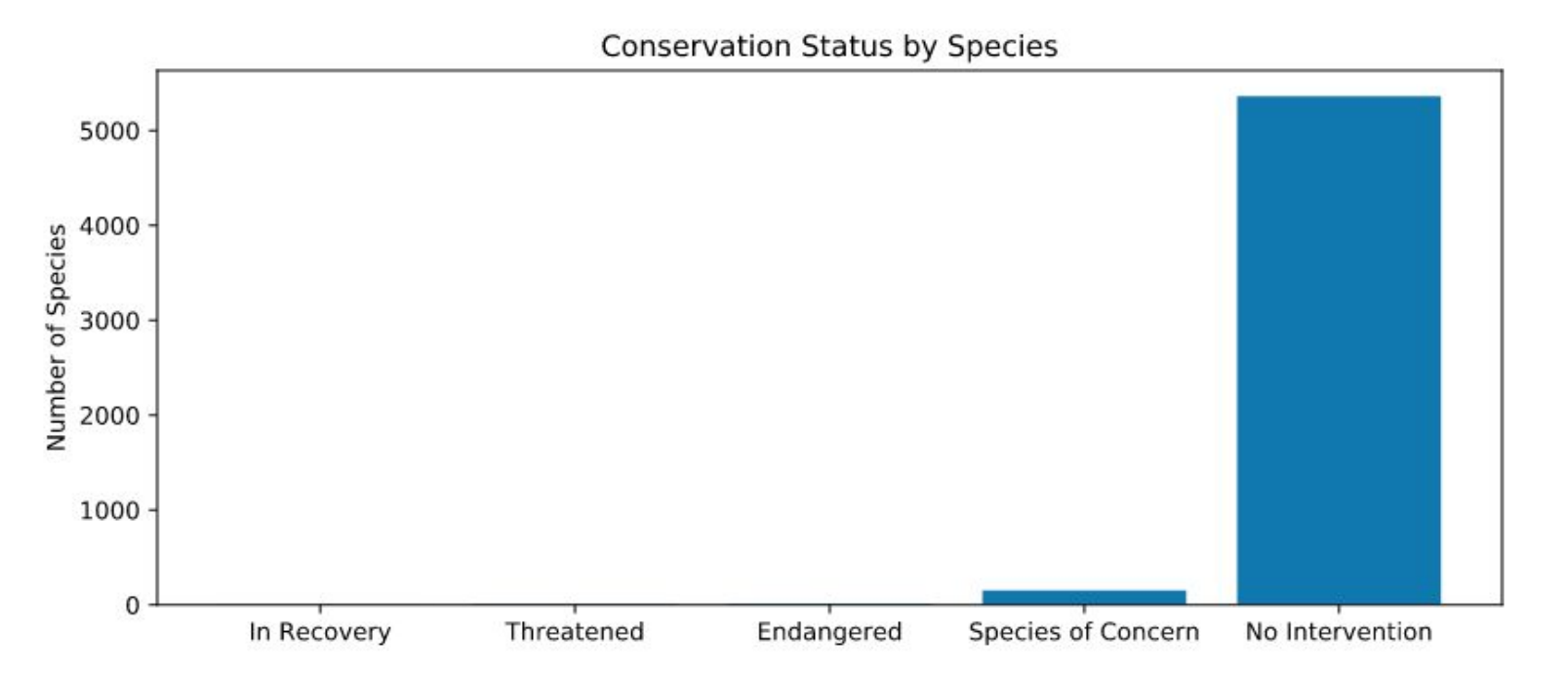
Data included in ‘Species_info.csv’

- Text file contained four distinct fields
  - Category
  - Scientific Name
  - Common Name
  - Conservation Status
- A lot of data was unnecessary for the research that was needed
  - Only 180 of the 5,543 unique species were listed as a status other than ‘No Intervention Needed’
  - Only 15 of 180 were considered endangered
- Mammals were the most protected species while Non-Vascular Plants were the least protected

Conservation Status by Species



Are certain species more likely to be endangered?

- We ran a Chi-Squared significance test to answer this question…
  - The first test to see if there was a statistical significance between birds and Mammals
    - As these were two categories with the highest percentage of protected species
  - The second Chi-Squared test was done using Reptiles and Mammals
    - This test proved statistically significant and we can confidently say that some species are more likely to be endangered than others

Recommendation for the Conservationists

- I would recommend that Conservationists use this data to determine where they should focus their efforts when trying to help protected species
- The data says that Mammals are the first category to focus on as they have the highest percentage of a protected population
- I do not know what strategies the Ranger would want to employ to begin these efforts, but the Mammals should be the main area of concern

Sample size determination for Foot and Mouth Disease Study

- Conservations next wanted to know the proper sample size to confidently detect a 5% percentage decrease in Foot & Mouth Disease in Sheep
  - We ran a calculation using the baseline of 15% of Sheep who had the disease last year and wanted a Statistical Significance of 90%
- The calculation gave us a proper sample size of 870 Sheep
  - It would take a little less than 2 Weeks to get the proper number of Observations at Yellowstone National Park and roughly 3.5 Weeks at Bryce National Park

Observations of Sheep per Week