BIODIVERSITY FOR THE NATIONAL PARKS

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Created for Introduction to Data Analysis Capstone: Option 2

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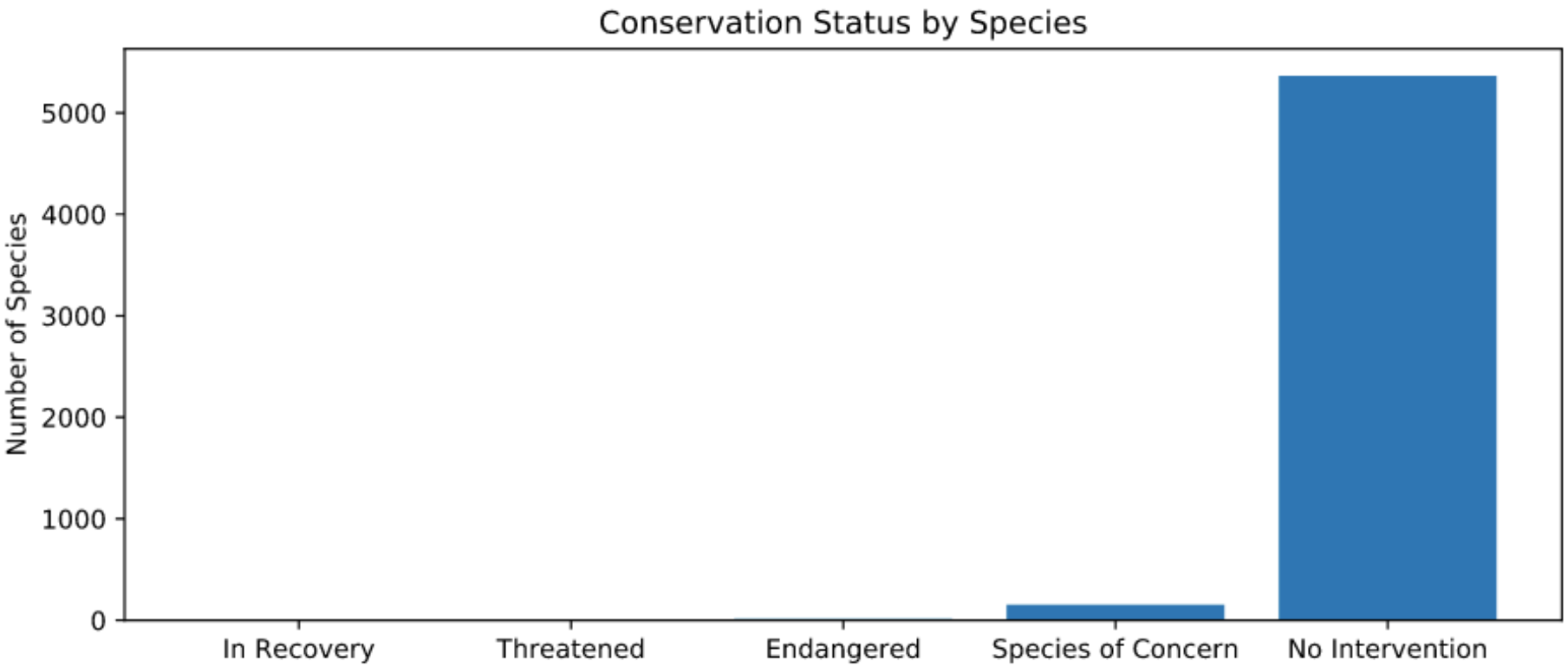
SPECIES_INFO.CSV

- Species_info.csv contained the following fields:
  - the scientific name of each species
  - the common name of each species
  - the conservation status
  - the species category
- Possible conservation status: endangered, in recovery, species of concern, threatened, or no intervention
- Categories: amphibian, bird, fish, mammal, nonvascular plant, reptile, and vascular plant

CONSERVATION STATUS BY SPECIES

The majority of species on the list require no intervention (5363), however there are other species that are at risk.

- In Recovery- 4
- Threatened- 10
- Endangered- 15
- Species of Concern- 151



CONSERVATION EFFORTS

- To determine if there was a statistically significant difference between categories that are protected vs. not-protected the data frame was grouped by category and conservation status and a Chi-Squared Test was performed to test for significance
- There was no significant difference between birds and mammals (pvalue= 0.687) and their conservation status. There was however a significant difference found between mammals and reptiles (pvalue= 0.038)
- Conservationists concerned about endangered species should focus on mammals which currently have 17% of their species protected

FOOT AND MOUTH REDUCTION EFFORTS

- Park Rangers seeking to reduce the rate of Foot and Mouth disease in parks have observed that 15% of sheep in Bryce National Park had the disease last year
- Scientists would like to be able to detect reductions of at least 5 percentage points, or a minimum detectable effect of 33.3%
- To perform this study at the 90% confidence interval, scientists would need to observe 870 sheep per variant at each park
- At Yellowstone National Park this study would take 1.72 weeks to complete whereas at Bryce National Park it would take 3.48

SHEEP OBSERVATIONS BY PARK

- Having fewer overall sheep observations per week at Bryce National Park (250) and Great Smoky Mountains National Park (149) means that the Foot and Mouth study will take longer to complete to reach the appropriate sample size than it will at Yellowstone National Park which had 507 observations in a week