BIODIVERSITY IN NATIONAL PARKS

EXAMINING ENDANGERED SPECIES WITH DATA ANALYTICS

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WITH THE ASSISTANCE OF CODECADEMY

SPECIES_INFO.CSV DEEP DIVE

- We examined a CSV file called species_info. It included a variety of information including the scientific name of each species, the common name of each species and the conservation status of each species. We are mostly concerned with analyzing the conservation status of the animals to see if there are any trends we notice that ultimately will lead to recommendations we can make to the National Park Services.
- Animals conservation status is either a species of concern, threatened, endangered, or in recovery(meaning formally endangered).

SPECIES_INFO.CSV DEEP DIVE

- Our initial findings was that there were 15 endangered, 4 in recovery, 151 species of concern and 10 threatened species. When we replaced null values in the conservation status field with “no intervention” we found the same numbers by category as previously mentioned but found 5363 species that required no additional intervention. We wanted to get a better picture of the breakdown of what type living things make up those different conservation statuses to figure out if certain types of species are more likely to be endangered. We found a animals ranging from amphibian, to bird, to fish, to mammals, and reptiles as well as vascular and non vascular plants. A large majority of those species needing no intervention were of the plant variety.

ENDANGERED STATUS BETWEEN SPECIES SIGNIFICANCE TEST

- We wanted to find out if certain species were more likely to be endangered with any degree of statistical significance. We ran a chi squared test to analyze this. We found a p value of 0.688 meaning we could conclude that the difference in percent of protected birds and mammals is not significantly significant.
- When we ran the chi squared test on reptiles and mammals we found a p value of 0.038 which is statistically significant. This means that some type of species are in fact more likely to be endangered than others.

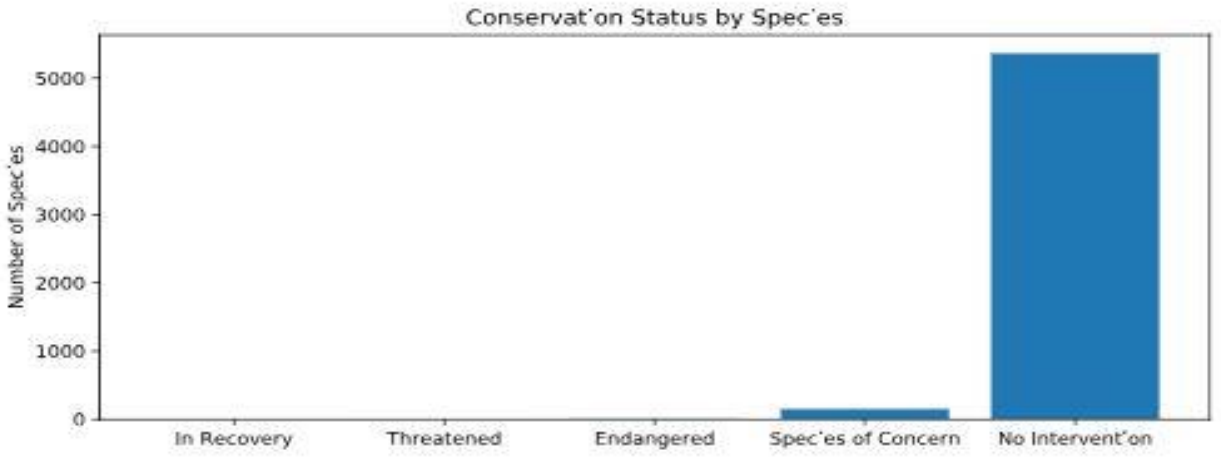
RECOMMENDATIONS FOR CONSERVATIONISTS

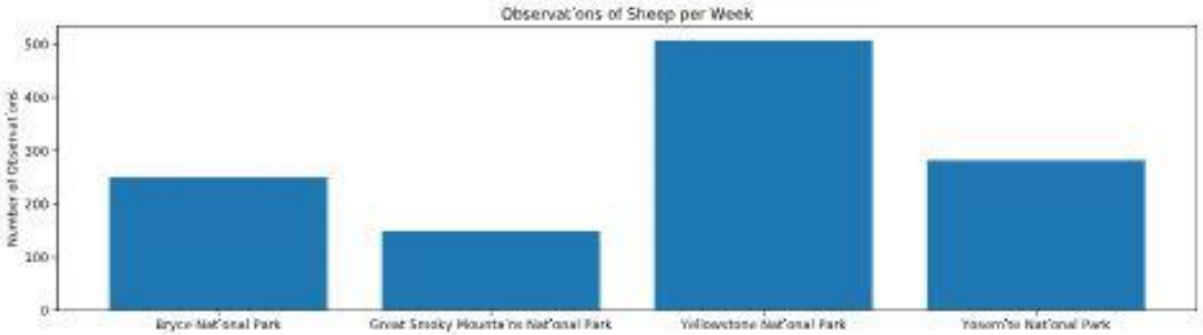
- Our sample indicated that mammals and birds are roughly 3 times more likely to be endangered than reptiles and many more times likely to be endangered than amphibians, fish, or plants. We recommend the National Parks Services dedicating efforts towards helping those more likely to be endangered.

SAMPLE SIZE DETERMINATION FOR FOOT AND MOUTH DISEASE STUDY

- Another thing that park rangers asked us to help with was to tell if there was any evidence of if their efforts to reduce foot and mouth disease among animals in the park is working. In order to find out what sample size we needed we used a tools that allowed us to plug in the baseline conversion rate, the statistical significance level we wanted to look at, the minimum detectable effect to calculate the sample size necessary to fill those parameters.

GRAPHS FROM OUR STUDY





THE END
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