Biodiversity for National Parks

Data Analysis Presentation

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The Data

The matter of this analysis, is to determine If there are any patterns or themes to the types of species that become endangered.

To investigate this, I was provided with data containing:

- Scientific name of species
- Common name of species
- The species conservation status

Current Conservation Status

Conservation Status	Species
Endangered	15
In Recovery	4
No Intervention	5362
Species of Concern	151
Threatened	10
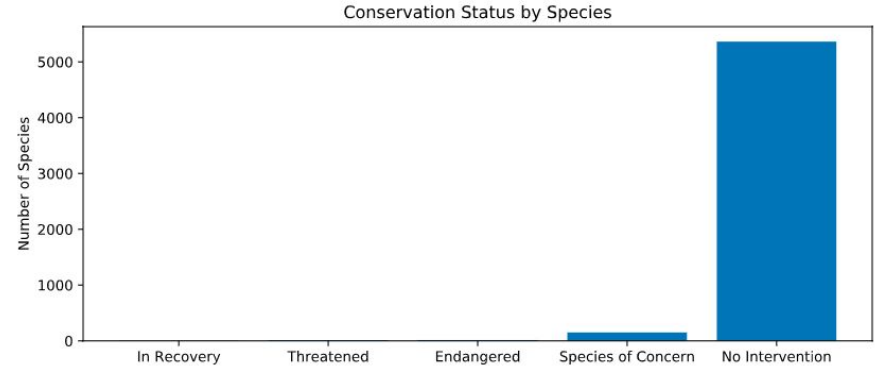
The Table & chart illustrate the lack of intervention implemented overall to species within the parks.
With the sheer size of population of different species, it's unrealistic to target every kind of specie. Let us look at narrowing down and prioritizing which types of species to focus on intervening.

Species of Focus

Type of Specie	% Protected
amphibian	8.86
Bird	15.37
Fish	8.73
Mammal	17.05
Non vascular Plant	1.5
Reptile	6.4
Vascular Plant	1.08

← Here we see that Mammals are more likely to be endangered, but is this a significant difference relative to other species?

After doing a chi squared test:
Mammal - Bird = 0.688   No
Mammal - Reptile = 0.038   YES

Findings and Recommendation

From the Chi Squared test, we can now say that certain types of Species are more likely to be endangered than others. Specifically Mammals compared to Reptiles. (with a probability value of 0.038)

From these findings we can recommend Conservationists to increase intervention for protecting Mammals as they are more likely to become endangered.

Sample Size for Foot and Mouth

To determine the sample size for the Foot & Mouth disease study, I used the baseline conversion calculator (or A/B Testing Calculator) as we want to choose from 2 options, whether the current program to reduce Foot & Mouth at the parks are working, or not working.

Method of sample size determination

To determine our inputs into the calculator, we have:
- The desired outcome is to detect reduction of at least 5 percentage points
- Last year 15% of sheep recorded to have Foot & Mouth.
- We will use 90 % statistical significance.

Baseline Conversion = 15
Statistical Significance= 90
Minimum detectable effect= (5 / 15) * 100

This results in our calculations to look like this:

Conclusions

- Based on the Data analysed, the conservationists can take away that certain species may be more likely to become endangered than others
- The sample size recommended to Scientists testing the Foot & Mouth reduction program is 870 for their observations to be significant, using the baseline conversion calculator.

(Attached in the next slides are charts included from the project)
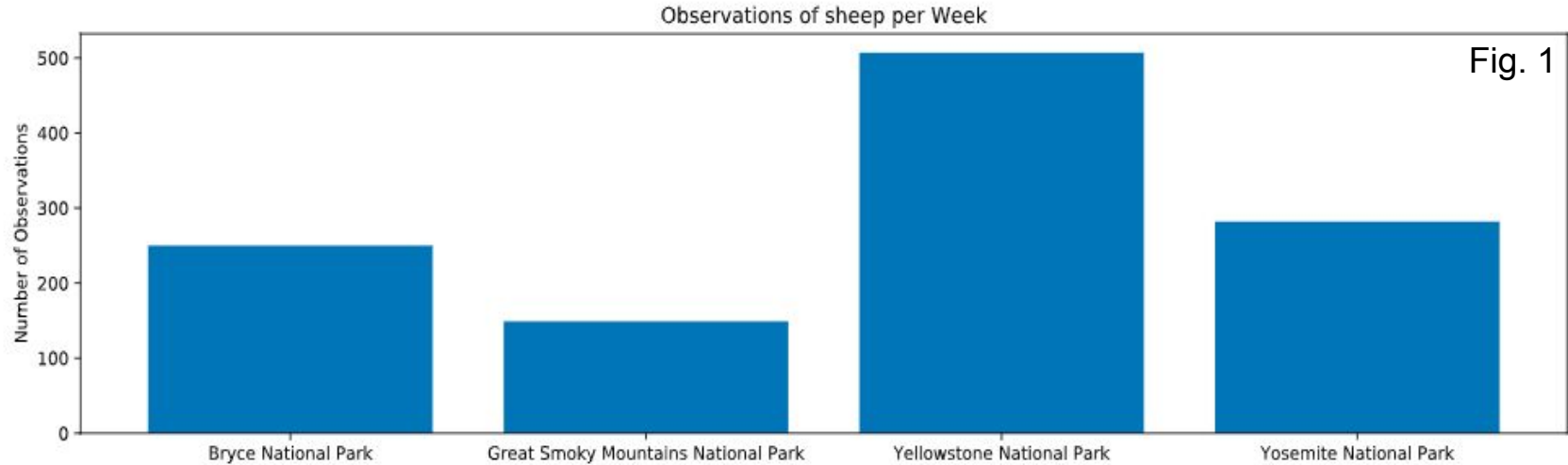
Charts and Graphs from project notebook

Observations of sheep per Week — Fig. 1

Figure 1 shows the sightings of sheep at all the different parks.
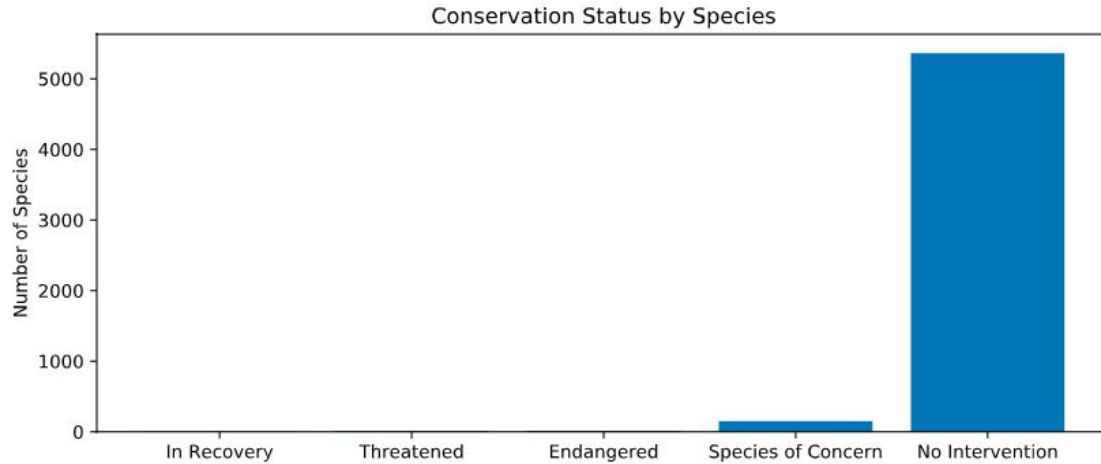
Fig. 2

Conservation Status by Species

Figure 2 shows the number of species in each conservation status.