



Biodiversity for the National Parks

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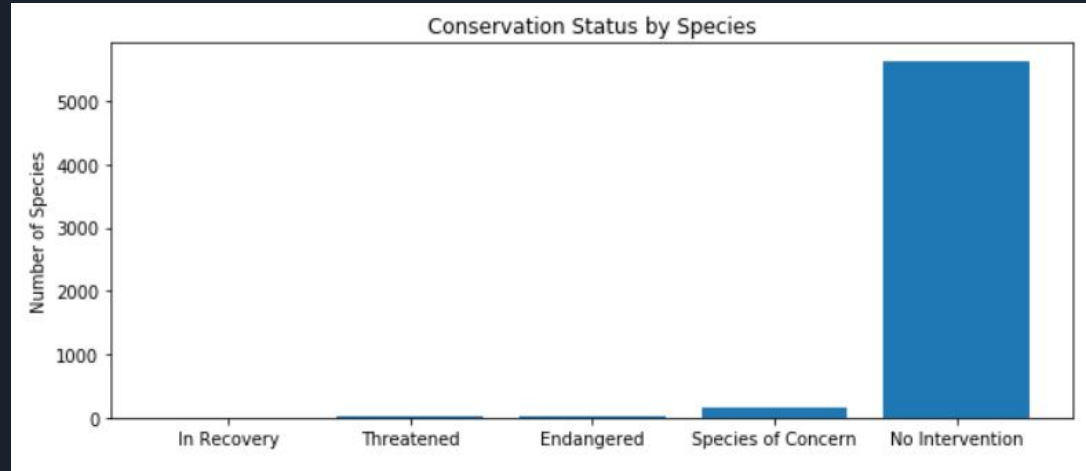


Variety of Species in National Parks

- We started our analysis by looking at our species info data.
- Based on this data, we noted there are over 5,500 unique species found in the various national parks we analyzed, with over 4,800 of these being Vascular Plants or Nonvascular Plants.
- The remaining categories of species include Mammals, Birds, Reptiles, Amphibians, and Fish.

Conservation status of Species in National Parks

- We analyzed the species to determine what number of these were in need of protection.
- Although this chart show us the majority of species need no intervention, we wanted to analyze this further.





Species in most need of protection

Species Type	Protected	Not Protected	% Protected
Amphibian	7	73	9.6%
Bird	79	442	17.8%
Fish	11	116	9.5%
Mammal	38	176	21.6%
Reptile	5	74	6.8%
Vascular Plant	46	4,424	1.0%
Nonvascular Plant	5	328	1.5%

We looked at whether or not the varying types of species were endangered and protected.

We wanted to answer the question if certain types of species were more likely to need protection.



Species in most need of protection

- In order to test the significance of these findings, and whether or not there were significant differences on between the species and the percent of the species needed protection, we ran Chi Square tests.
- We found the differences in percent protected between Mammals and Birds were not significantly different, while when testing Mammals versus Reptiles, there was a significant difference.
- Based on these tests, we recommend spending more resources on Mammals and Birds, as a higher percent of these species end up needing protection.



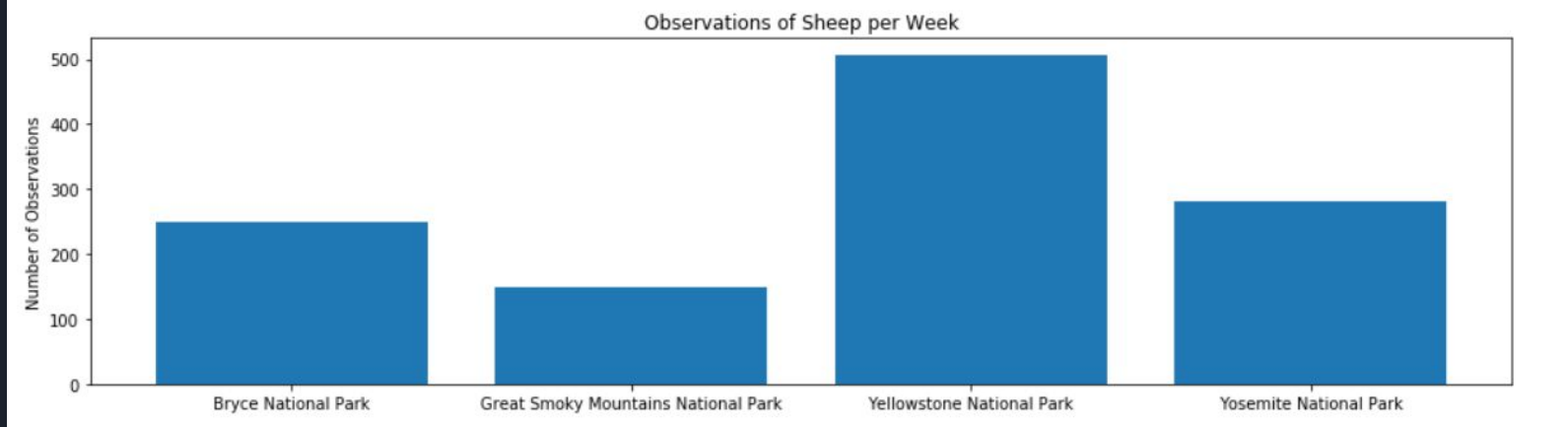
Sheep Observation Analysis

Due to new programs targeting foot and mouth disease in sheep in our National Parks, we wanted to analyze the observations of sheep and determine whether or not these programs are working



Sheep Observations by National Park

We first wanted to determine how many observations of sheep were seen at our various National Parks.





Sheep Conservation Status

Our biggest concern is with the Sierra Nevada Bighorn Sheep

Scientific Name	Common name	Conservation Status	Observations
Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	542
Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern	493
Ovis canadensis sierras	Sierra Nevada Bighorn Sheep	Endangered	153



Foot and Mouth Disease Tests

- In order to test whether the foot and mouth disease program is working, the scientists need to test enough sheep to determine a 5% reduction in the disease.
- With a minimum detectable effect of 33.3%, a baseline of 15% sickness prevalence, and a 90% significance value, we determined a sample size of 510 sheep observations.
- Based on our observation counts, Bryce will need a little over 2 weeks and Yellowstone will only need 1 week in order to obtain these samples.

Thank You

