

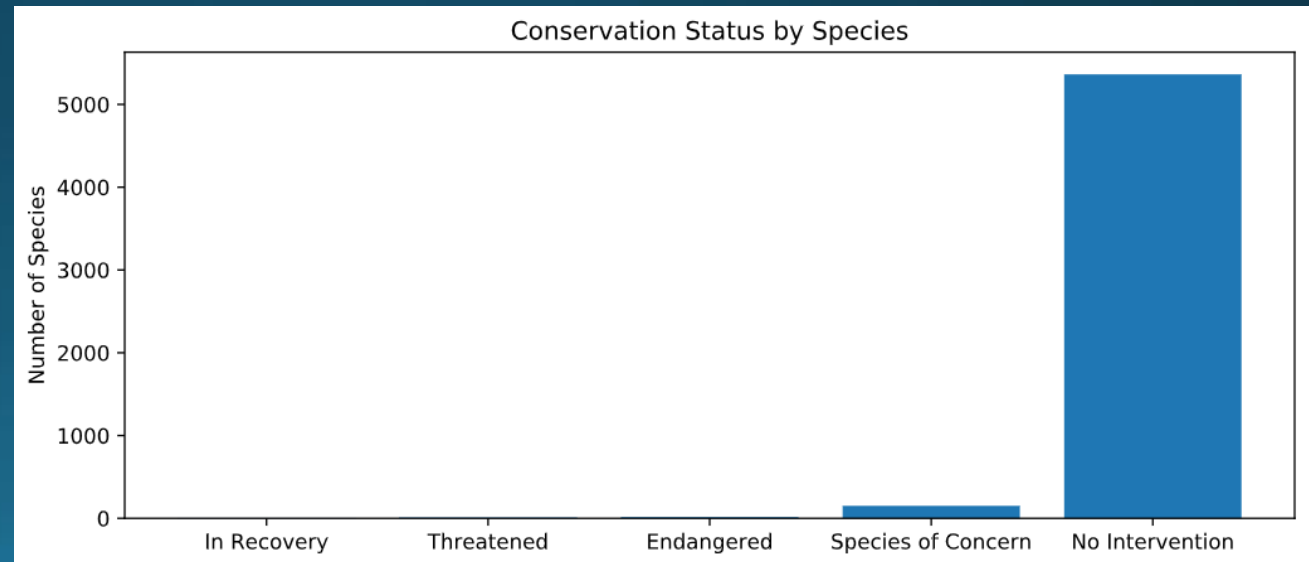
Codecademy – Intro to Data Analysis
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Biodiversity Capstone

Wildlife Species Info

- 5,543 species live in the park
- The species in the park are divided into 5 conservation statuses and 7 species categories
- 76% of the species categories are Vascular Plants
- 96.7% of the species have a conservation status of No Intervention

	conservation_status	scientific_name
0	Endangered	15
1	In Recovery	4
2	No Intervention	5363
3	Species of Concern	151
4	Threatened	10



Significance Calculations – Mammal v. Bird

- Our null hypothesis is that there is no significant difference between the mammal and bird data to see if one category of species is more likely to be endangered than another
- In this analysis we looked for a p-value of less than 0.05 to determine whether or null hypothesis is valid
- The result returned was 0.6875 meaning that we cannot reject our null hypothesis, and that there is not a significant difference between mammal and bird data

Significance Calculations – Mammal v. Reptile

- Moving to compare the difference in mammal and reptile species, we perform the same analysis
- Our results returned a value of 0.0383 meaning that we can reject our null hypothesis and that there is a significant difference between the rate of mammal and reptile species that are endangered

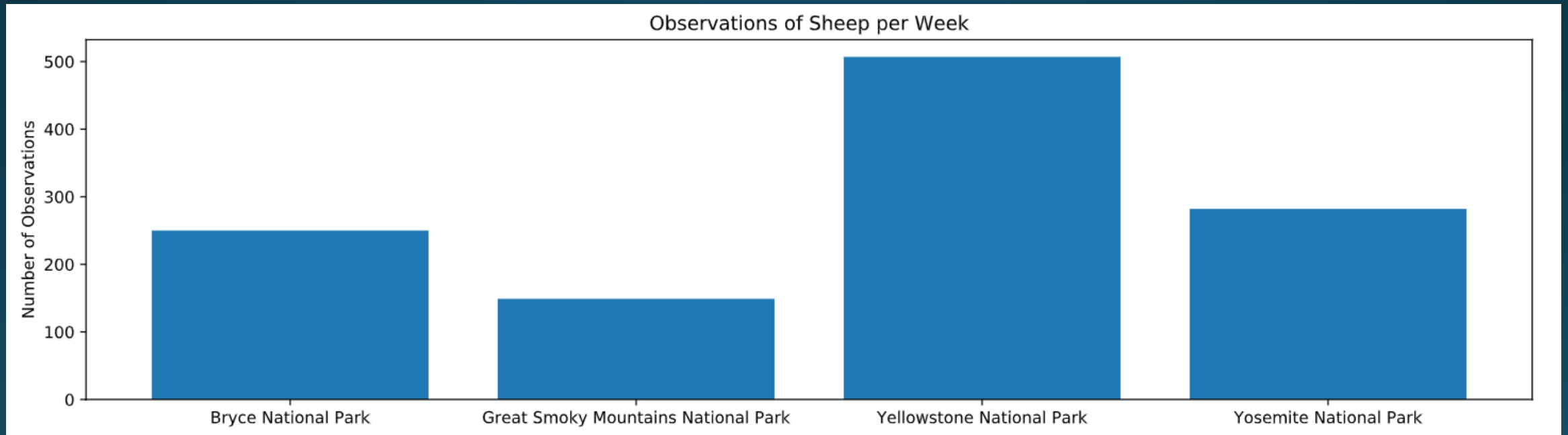
Endangered Species Recommendation

- The chart to the right shows the summary of each species category along with both the number of species protected, and not protected
- The Percent Protected measure shows the percentage of each species category that are protected
- Birds and Mammals are the most likely to become endangered
- Additional analysis on the correlation between protected species and the incidence of certain conservation statuses may be beneficial

Category	Not Protected	Protected	Percent Protected
Mammal	146	30	17%
Bird	413	75	15%
Amphibian	72	7	9%
Fish	115	11	9%
Reptile	73	5	6%
Nonvascular	328	5	2%
Vascular Plant	4216	46	1%

Foot & Mouth Disease – Sheep Observations

- The graph of observations of sheep per week shows that Yellowstone National Park has a much greater incidence of sheep observations than the rest



Foot & Mouth Disease - Conclusions

- 15% of sheep at Bryce National Park have foot & mouth disease
- Scientists wanted to confirm that a greater than 5% drop in observed cases of foot & mouth disease
- This would require at least 870 sheep to be observed as part of our sample size
- This would take approximately two weeks in Bryce National Park, based on the number of sheep observed at that park
- This would take approximately one week in comparison at Yellowstone based on the number of sheep observed at that park.