

Biodiversity for the National Parks

Capstone Option 2

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1 Species info

Overview

- Species_info.csv included the following data about the various species in selected National Parks:
 - Category
 - Scientific Name
 - Common Name
 - Conservation Status
- There were 5,541 species in the Data Frame and 7 categories: Mammal, bird, reptile, amphibian, fish, vascular plant, and non-vascular plant.

Conservation status:

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

Findings

1. Species more likely to be endangered

	category	not_protected	protected	percent_protected
0	Amphibian	72	7	0.088608
1	Bird	413	75	0.153689
2	Fish	115	11	0.087302
3	Mammal	146	30	0.170455
4	Nonvascular Plant	328	5	0.015015
5	Reptile	73	5	0.064103
6	Vascular Plant	4216	46	0.010793

Chi squared tests:

- 'Mammals' and 'Birds' yields p-value of 0.688
- 'Mammals' and 'Reptiles' yields p-value 0.038

Recommendation: Focus protection measures on selected bird and mammal species.

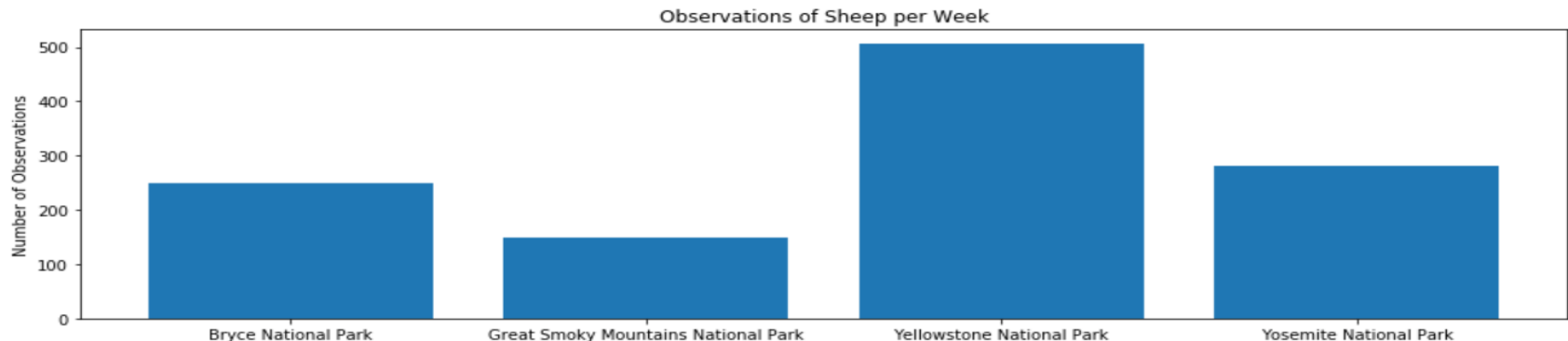
2 Sample size determination for the foot and mouth disease study

Factors

- Minimum detectable effect: 33%
- Baseline: 15%
- Statistical Significance: 90%

Sample Size per Variation

520



To observe enough sheep one would need to observe **approximately 2 weeks** in the case of Bryce National Park, and **1 week** in that of Yellowstone National Park.