National Parks Biodiversity Analysis

Codecademy Introduction to Data Analysis

Clare Oven

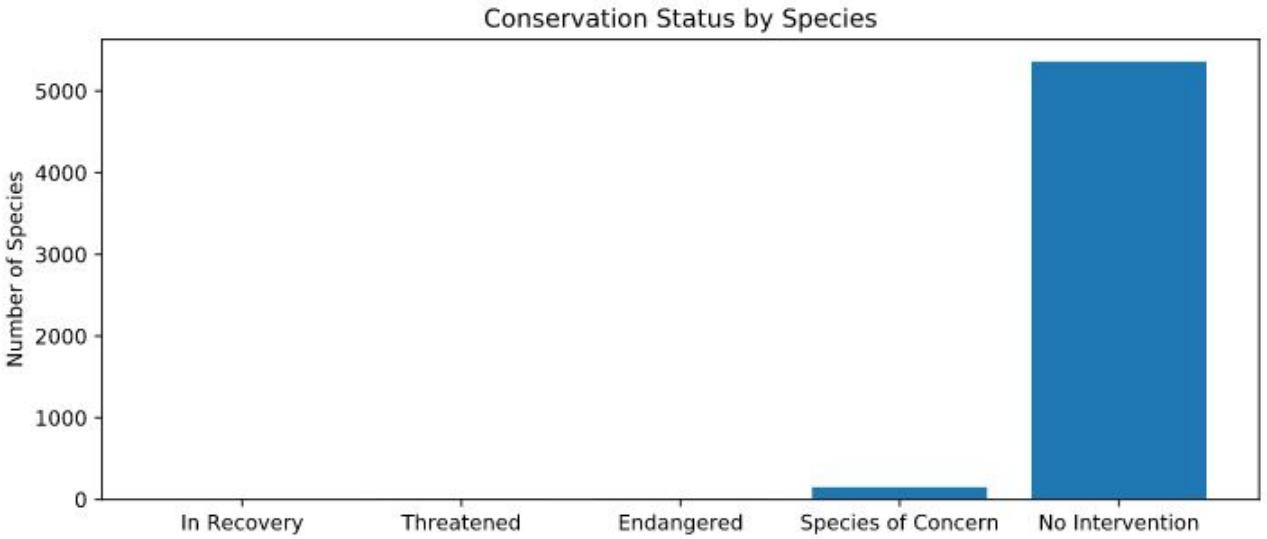
Data Overview

Data provided by National Parks Service on species living in parks

Includes data on 5,541 different species:

- Category (mammal, bird, reptile, amphibian, fish, vascular plant, nonvascular plant)
- Scientific name
- Common name
- Conservation status (endangered, threatened, species of concern, in recovery, no intervention)

Species & Conservation Status



Protected Species by Category

Category	Number Protected	Number Not Protected	% Protected
Amphibian	7	72	8.9%
Bird	75	413	15.4%
Fish	11	115	8.7%
Mammal	30	146	17.0%
Reptile	5	73	6.4%
Nonvascular Plant	5	328	1.5%
Vascular Plant	46	4,216	1.0%

Protected Species Significance Calculations

Chi-squared tests were performed to determine whether significant differences existed between the rates of protected species in different categories

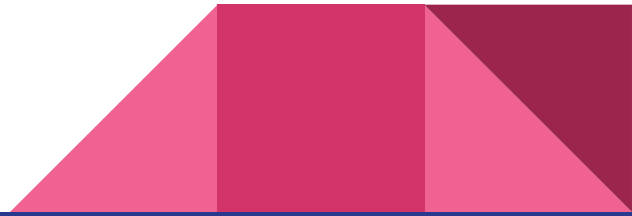
Mammals vs birds: p-value = 0.687, no significant difference

Mammals vs reptiles: p-value = 0.038, significant difference

Recommendations to Conservationists

Certain categories of species are more likely to be endangered, threatened, a species of concern, or in recovery

Conservationists should focus their efforts on those species that are more likely to need protection (mammals & birds)



Sheep Foot and Mouth Disease Study

Plan for scope of study at Yellowstone National Park to determine effectiveness of foot and mouth disease reduction efforts among sheep at the park

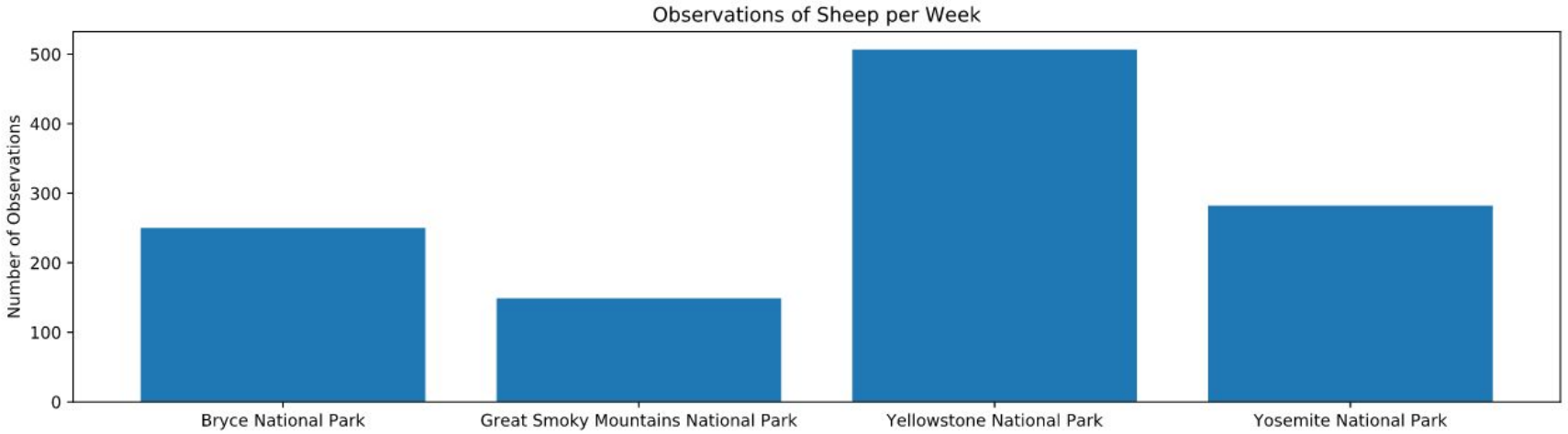
Need to determine sample size to observe in order to confirm 5% reduction in disease

Baseline: 15% (sheep at Bryce National Park with disease)

90% statistical significance

Sample size needed at Yellowstone: 870

Sheep Observations



Based on sheep sightings per week, rangers at Yellowstone should be able to observe enough sheep in 2 weeks to complete the foot and mouth disease study.