Biodiversity Data Analysis

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Species Workbook Findings

Findings

- The workbook contains 5,541 different animal species
- There are 7 different categories of animals included in the workbook. They are the following:
  - Mammal
  - Bird
  - Reptile
  - Amphibian
  - Fish
  - Vascular Plant
  - Nonvascular Plant
- There are 4 unique conservation statuses as well as cells that are empty “nan”:
  - Species of Concern
  - Endangered
  - Threatened
  - In Recovery

Count of Scientific Names by Conservation Status

Conservation Status	Count of Scientific Names
Endangered	15
In Recovery	4
No Intervention	5,363
Species of Concern	151
Threatened	10

Endangered Species Examination

Category	Count of Not-Protected Animals	Count of Protected Animals	Percent of Animals Protected
Amphibian	72	7	8.9%
Bird	413	75	15.4%
Fish	115	11	8.7%
Mammal	146	30	17.0%
Nonvascular Plant	328	5	1.5%
Reptile	75	5	6.4%
Vascular Plant	4216	46	1.1%

Sheep Observations

The following parks calculated the following observations of sheep:

- Bryce National Park: 250
- Great Smoky Mountains National Park: 149
- Yellowstone National Park: 507
- Yosemite National Park: 282

See appendix for bar chart regarding observations of sheep by park.

Significance Calculations

- P-value of Chi-Squared Calculation between Mammals and Birds = 0.6876
  - There is **not** a statistically significant difference.
- P-value of the Chi_Squared calculation between Mammals and Reptiles = .03836
  - **This is a statistically significant difference.**

Recommendations

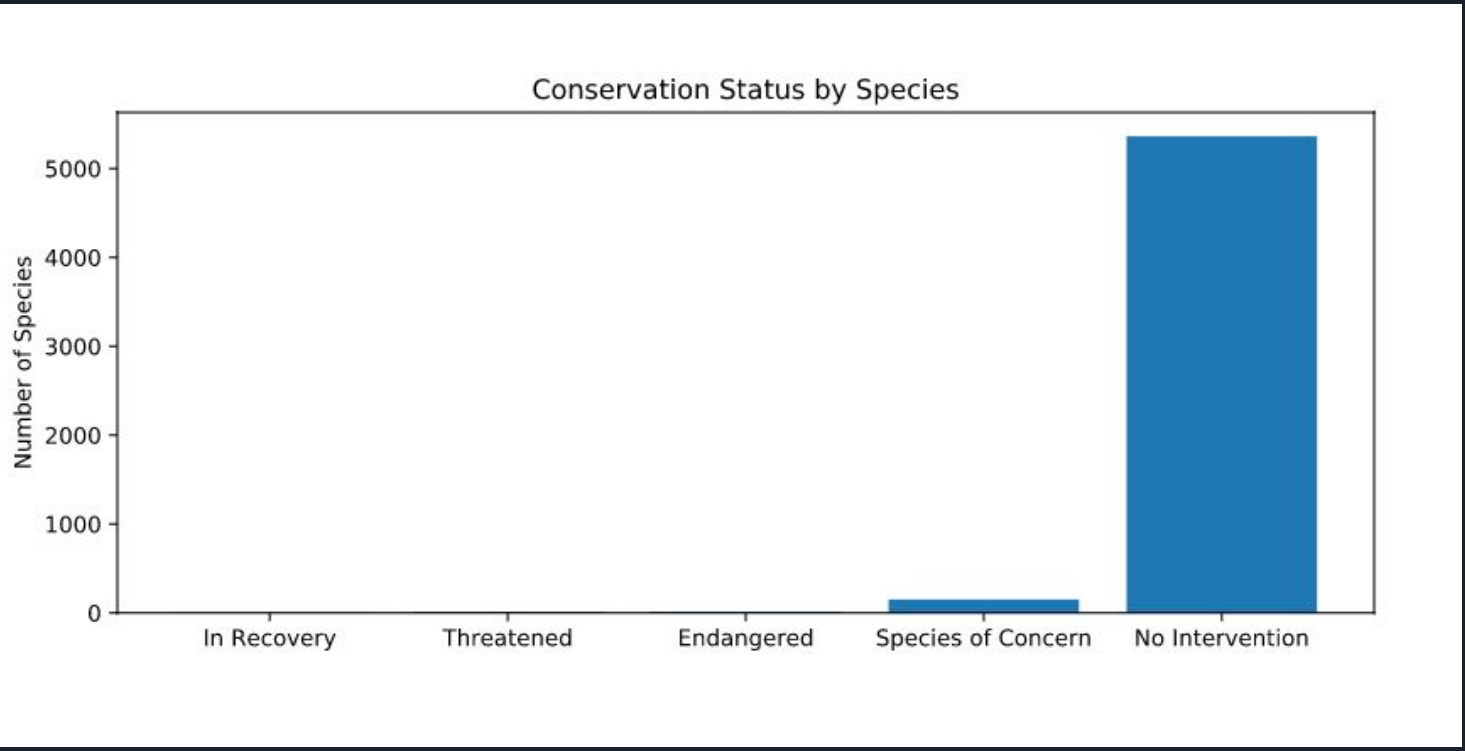
While the likelihood that mammals are more inclined to be endangered than birds was found to be not statistically significant, the likelihood that mammals are more inclined to be endangered than reptiles was found to be statistically significant.

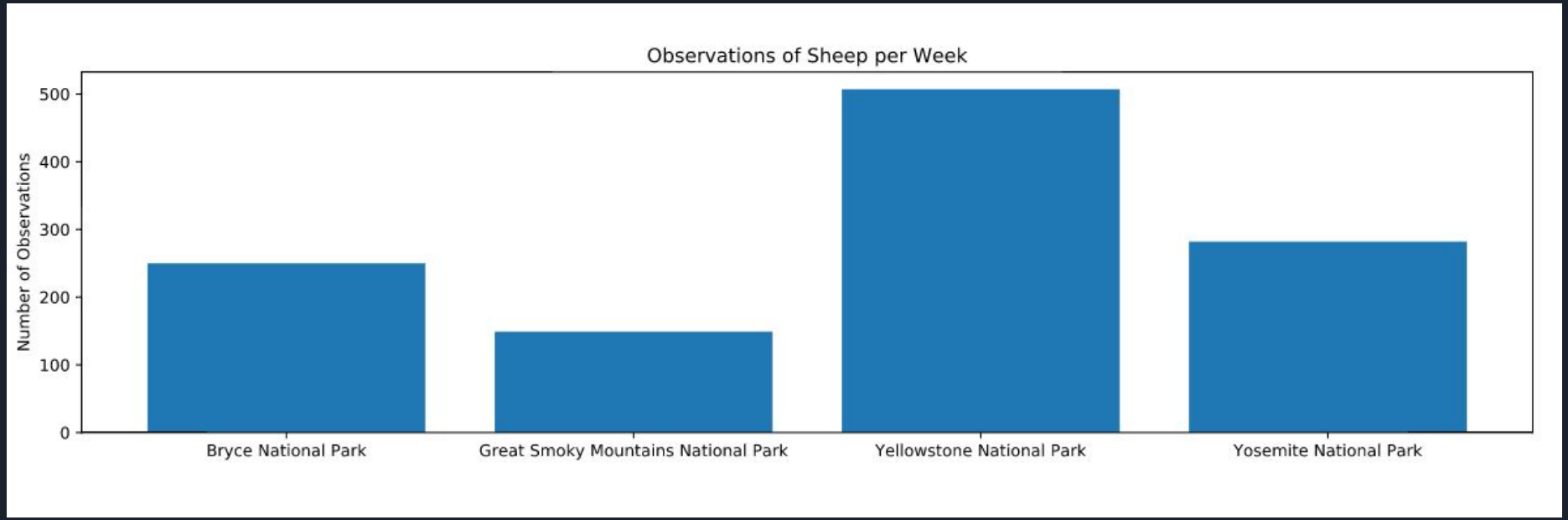
Sample Size Determination

- Baseline = 15%
- Minimum Detectable Effect = 33.33%
- Sample Size = 870

- Weeks of Observation for Yellowstone National Park = 1.7 Weeks
- Weeks of Observation for Bryce National Park = 3.5 Weeks
- Weeks of Observation for Great Smoky Mountains National Park = 5.8 Weeks
- Weeks of Observation for Yosemite National Park = 3.1 Weeks

Appendix


Conservation Status by Species
Number of Species
5000
4000
3000
2000
1000
0
In Recovery
Threatened
Endangered
Species of Concern
No Intervention


Observations of Sheep per Week
Number of Observations
0
100
200
300
400
500
Bryce National Park
Great Smoky Mountains National Park
Yellowstone National Park
Yosemite National Park