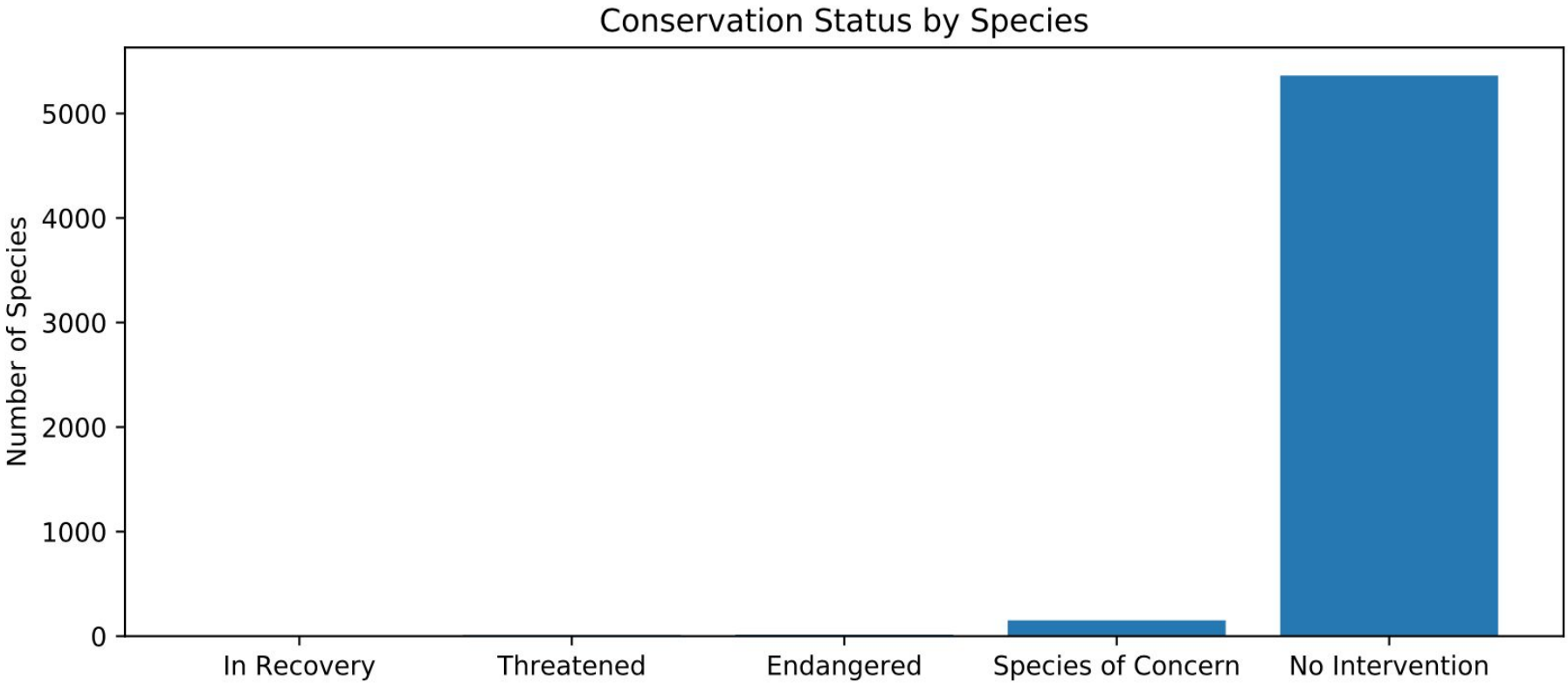
Biodiversity for the National Parks

By Amy Cerrito

Conservation Status

Endangered	15
In Recovery	4
Species of Concern	151
Threatened	10

Inspecting the data from species_info.csv, 5363 entries do not have any protected designation. I added the category ‘No Intervention for those entries that had none (see slide 3, column ‘No intervention’)


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

Are certain species more likely to be endangered than others?

Null hypothesis: there is no significant difference between species

Compare Mammals vs Birds:

Results of chi-squared test: p-value of ~0.688

Conclusion: difference between the percentages of protected birds and mammals is not significant and is a result of chance.

Compare Mammals vs Reptiles:

Results of chi-squared test: p-value of ~0.038

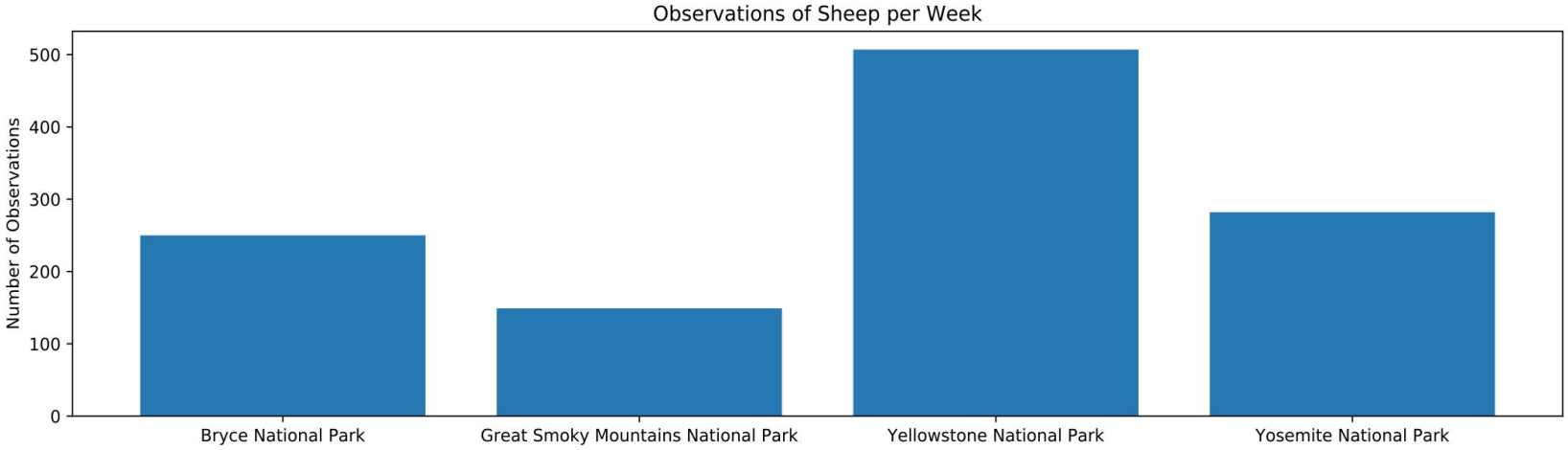
Conclusion: difference between the percentages of protected reptiles and mammals **IS** significant and **IS NOT** a result of chance.

Certain types of species ***ARE*** more likely to be endangered than others.

Recommendation

Based on the conclusion that some species are more likely to be endangered than others, it would be my recommendation to focus recovery efforts on those species.

Observations of Sheep per Week



Occurrence of Foot and Mouth in Sheep

Goal: to understand if there has been a reduction in the occurrence of Foot and Mouth disease among the population of sheep within the National Parks

In order to get the length of time needed to get the observations needed to understand the impact of Foot and Mouth these numbers were used to calculate sample size (which was determined to be 890 sheep per park)
Baseline conversion rate: **15.0**
Minimum detectable effect: **0.333333333333**
Statistical significance: **90%**

Sample Size needed: 890

Weeks needed for study of sheep

Weeks needed to get samples of sheep (based on observations in slide 5 and sample size of 890)
Bryce: 3.56
Great Smoky: 5.97
Yellowstone: 1.75
Yosemite: 3.16

Weeks were calculated using this formula:

sample_size_per_variant = 890
park_weeks_observing = sample_size_per_variant/float(observation_number_for_park)