

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

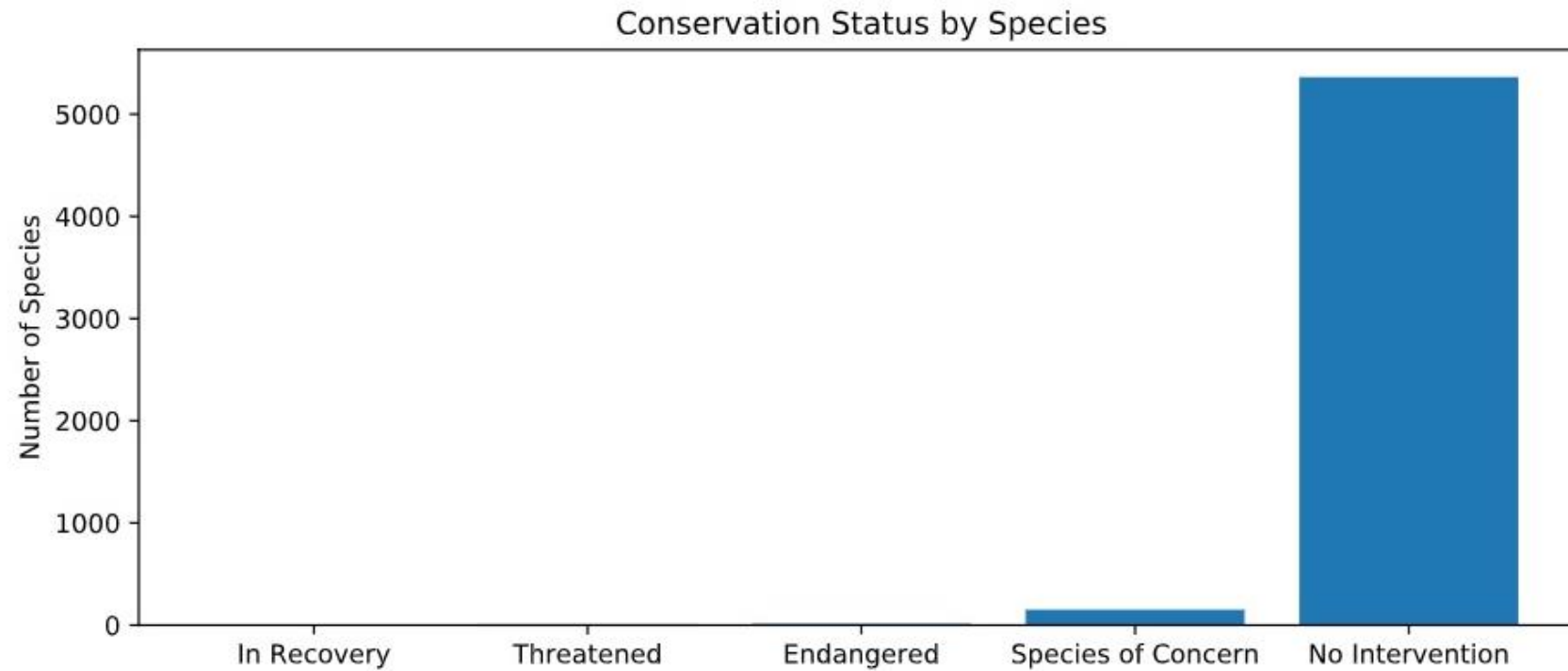
# Biodiversity for the National Parks

Nish Desai

# Species Data Observations

- ▶ Data provides us with species' Category, Scientific name, Common name, and Conservation status.
- ▶ 5365 species require no intervention, with 151 listed as species of concern, 15 endangered, 10 threatened, and only 4 in recovery.
  - ▶ Plants are the least protected, while Birds and Mammals are the most protected

# Number of Species Under Each Conservation Status



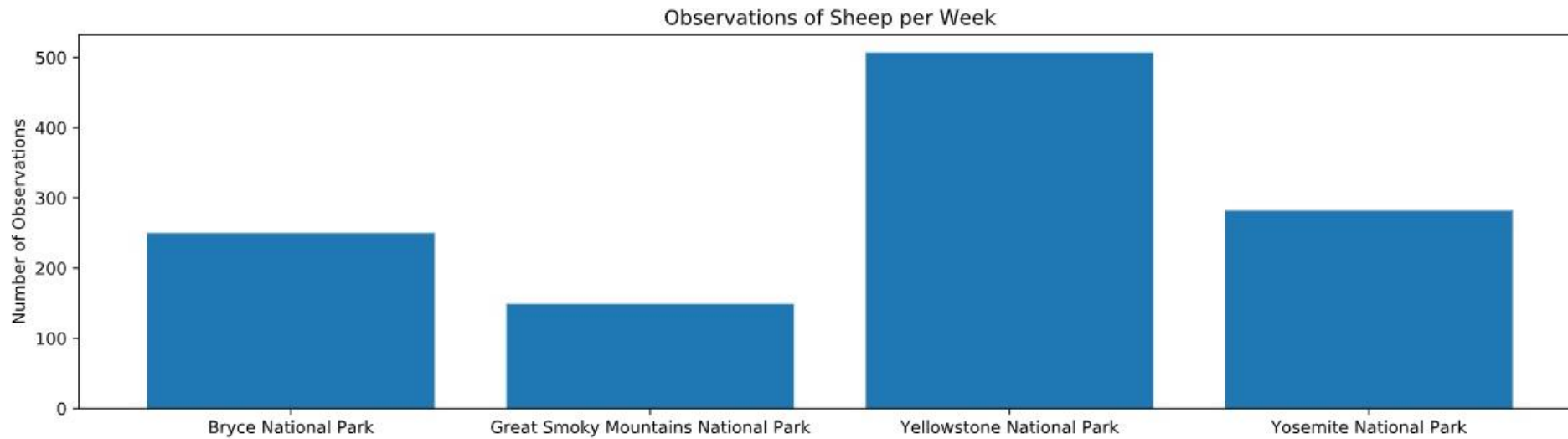
# Significance Calculations

- ▶ A Chi2 test was utilized in order to discern whether or not the differences in the categories' percent protected was due to chance.
- ▶ When performed on Mammals and Birds, a pvalue of 0.6876 was determined, and since this is greater than 0.05, we concluded that the difference in percentage protected is due to chance and is insignificant.
- ▶ However, when Chi2 was performed on Mammals and Reptiles, a pvalue of 0.038 was determined, meaning that there was indeed a significant difference in the protected percentage of Mammals and Reptiles.
- ▶ Thus, some species are more likely to be endangered than others.

# Recommendations

- ▶ Based on our significance calculations, conservation efforts should remain focused on Mammals and Birds.
- ▶ HOWEVER, given the significant difference in the percentage protected between Mammals and Reptiles, conservationists should also increase efforts centered around Reptiles.
- ▶ Amphibians, Fish, and plants should also be focused on, since their percent protected values show a significant difference when tested along Mammals.

# Foot and Mouth Study: # Sheep Observed per Week at Different National Parks



# Foot and Mouth Study: Sample size determination

- ▶ Using the given baseline rate of 15%, and a requirement of a 5% negative change in the observed cases of foot and mouth disease among sheep, we determined a minimum detectable effect of 33.33%
- ▶ With the sample size calculator, we entered the baseline 15%, confidence level of 90%, and min detectable effect of 33.33% in order to determine a sample size of 870.
- ▶ The following shows how many weeks at each park would be required to reach a sample size of 870

Park Name	# Weeks to Reach 870 Sample Size
Bryce	3.48
Great Smoky Mountains	5.84
Yellowstone	1.72
Yosemite	3.09