HANNAH ROTTER

AN ANALYSIS OF THE BIODIVERSITY IN NATIONAL PARKS

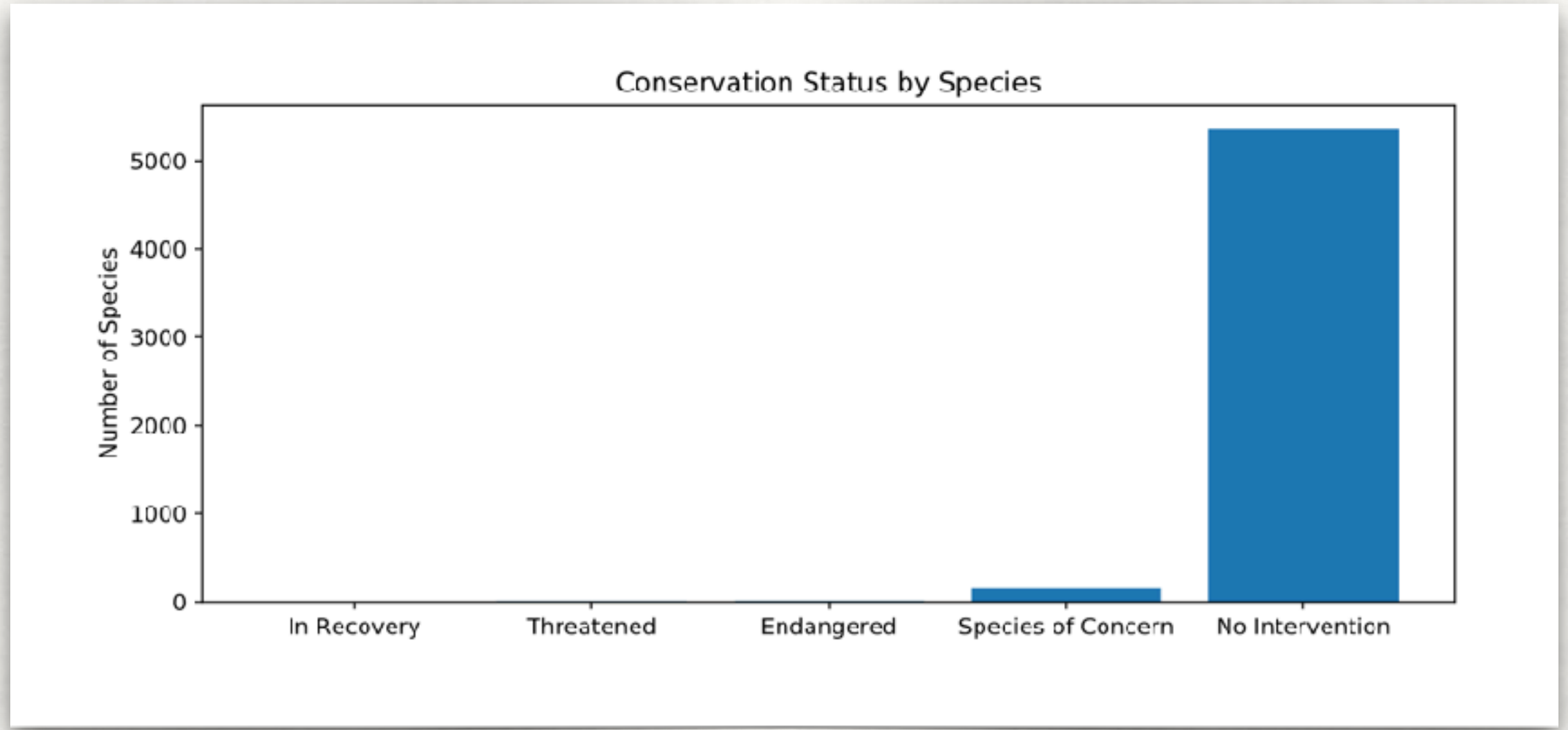
SPECIES

DATA FRAME INFO

- The Species data frame contains important information about the species that reside in some well known national parks such as:
  - Category (i.e. Mammal, bird, reptile etc.)
  - Scientific name
  - Common names
  - Conservations status
- From this data frame one can determine which species fall in certain categories of protection.

SPECIES

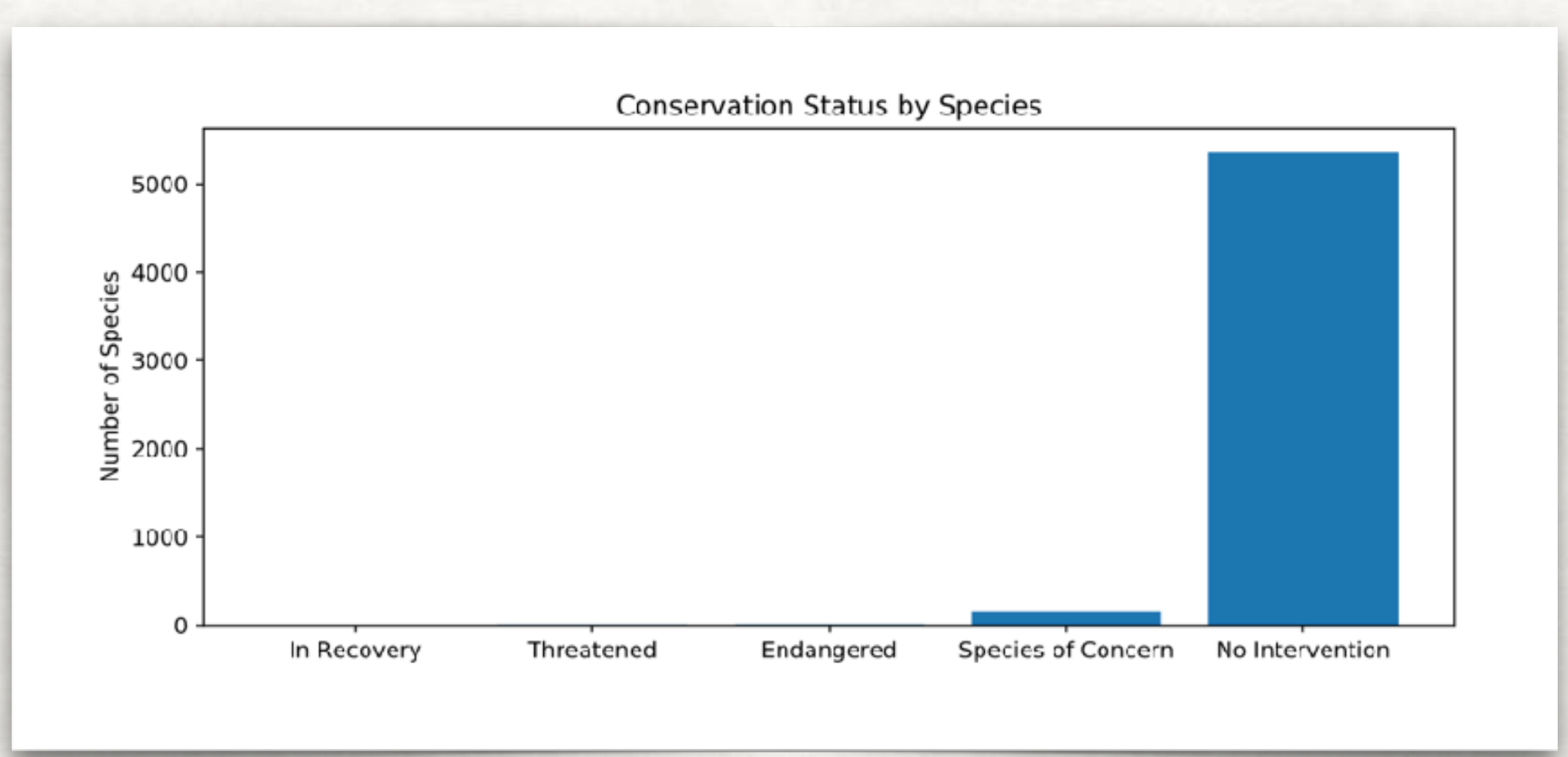
CONSERVATION STATUS



SPECIES

CONSERVATION STATUS

- As seen in the graph the majority of the species in the national parks are not protected species with a very few being species of concern.
- This, however does not reveal if whether certain types of species are at a greater risk.



SPECIES

PROTECTED SPECIES BY CATEGORY

- By dividing the species into their specific categories it is easier to see what kind of species need more of a conservation effort.

Category	Not Protected	Protected	Percent Protected
Amphibian	72	7	8.86
Bird	413	75	15.37
Fish	115	11	8.73
Mammal	146	30	17.05
Reptile	73	5	6.41
Vascular Plant	4216	46	1.08
Nonvascular Plant	328	5	1.50

SPECIES

PROTECTED SPECIES BY CATEGORY

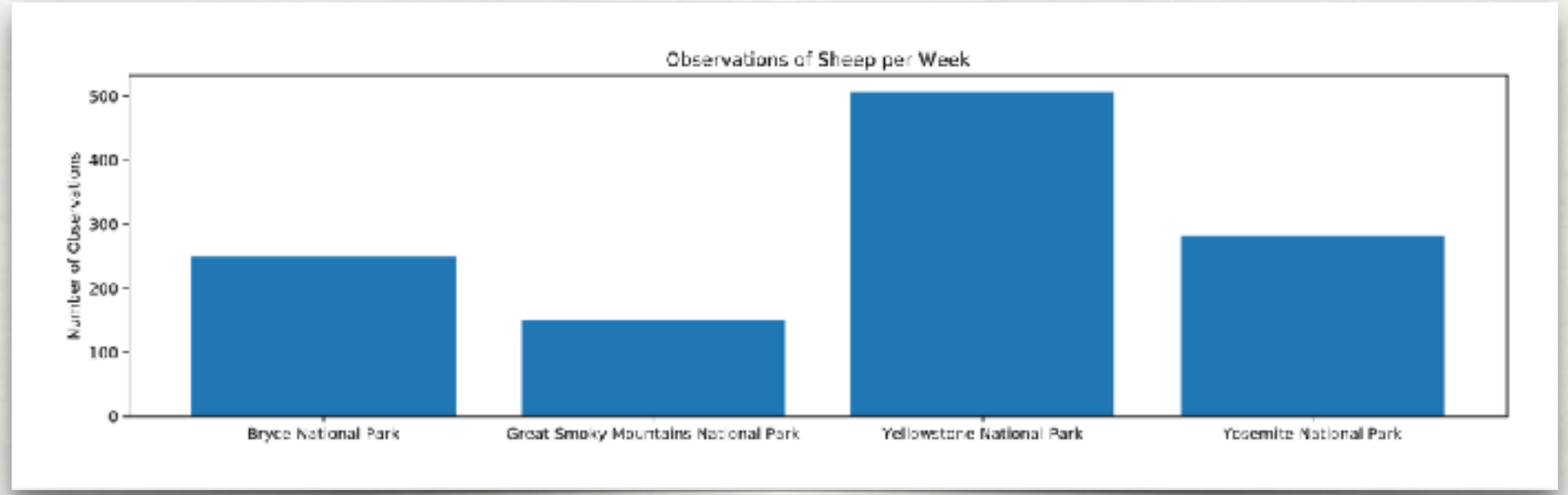
- Bird and Mammal species are amongst the most protected of all of the species categories.
- When Birds and Mammals were compared to each other using a chi squared test there was not significant difference in the percent protected (p-value of 0.69).
- However when comparing Mammals and Reptiles with the chi squared test there was a significant difference in percent protected with a p-value of 0.04.
- Therefore focus for conservation should be given to Bird and Mammal species.

FOOT AND MOUTH DISEASE

OBSERVATIONS OF SHEEP SPECIES

- By combining the Observations data frame and the Species data frame the amount of all of the sheep species observed in each park was able to be determined.

Park	Number of Observations per
Bryce National Park	250
Great Smokey Mountains National Park	149
Yellowstone National Park	507
Yosemite National Park	282



FOOT AND MOUTH DISEASE

MONITORING

- It was record by Bryce National Park that 15% of sheep had foot and mouth disease in the past year. This was used for the baseline for finding the sample size of sheep that need to monitored to test if the amount of those infected has decreased due to the new program.
- A reduction in 5 percentage points was wanted in order to test for a significant decrease. This made the minimum detectable effect 33.3%.
- With a statistical significance of 90% a sample size of 510 will be needed.
- This would take about 1 week of observation in Yellowstone National Park and about 2 weeks in Bryce National Park.