



Biodiversity for the National Parks

Analysis by Tatum Mackey

Animal Species

- There are 5541 different animal species
- The species are separated into 7 categories as shown in the table to the right
- Protected species are classified as Species of Concern, Threatened, Endangered, and In Recovery

Category	Not Protected	Protected	Percent Protected
Mammal	146	30	17%
Bird	413	75	15%
Amphibian	72	7	9%
Fish	115	11	9%
Reptile	73	5	6%
Nonvascular Plant	328	5	2%
Vascular Plant	4216	46	1%

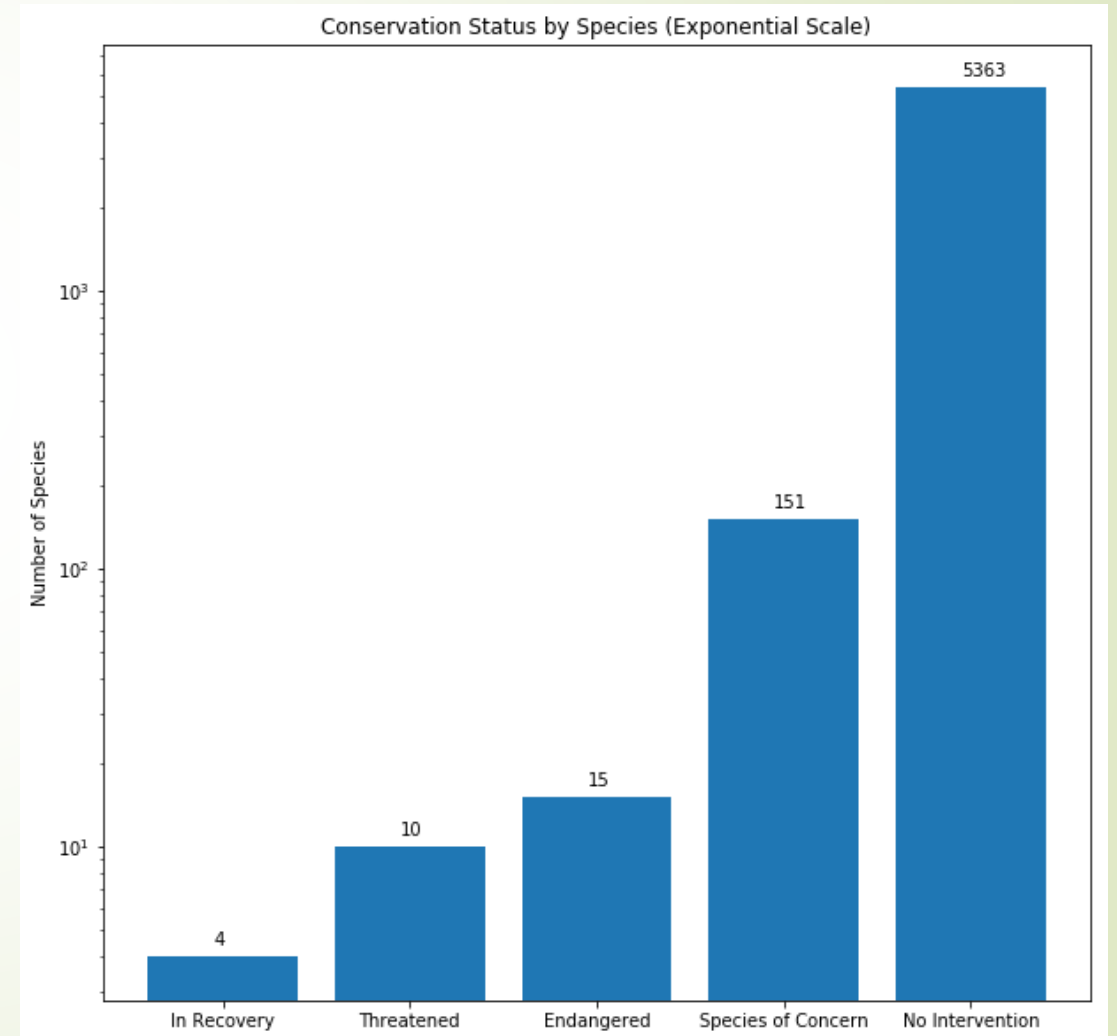
Chi Square Test

- ▶ The table on the right shows pvals from chi square tests comparing the likelihood that a species from a certain category is endangered compared to mammals
- ▶ If $pval < 0.05$ there is a statistically significant difference
- ▶ I recommend that conservationists don't worry too much about reptiles and plants since they are significantly less likely to need protecting than mammals

Category	Percent Protected	pval
Mammal	17%	
Bird	15%	0.688
Amphibian	9%	0.128
Fish	9%	0.056
Reptile	6%	0.038
Nonvascular Plant	2%	0.000
Vascular Plant	1%	0.000

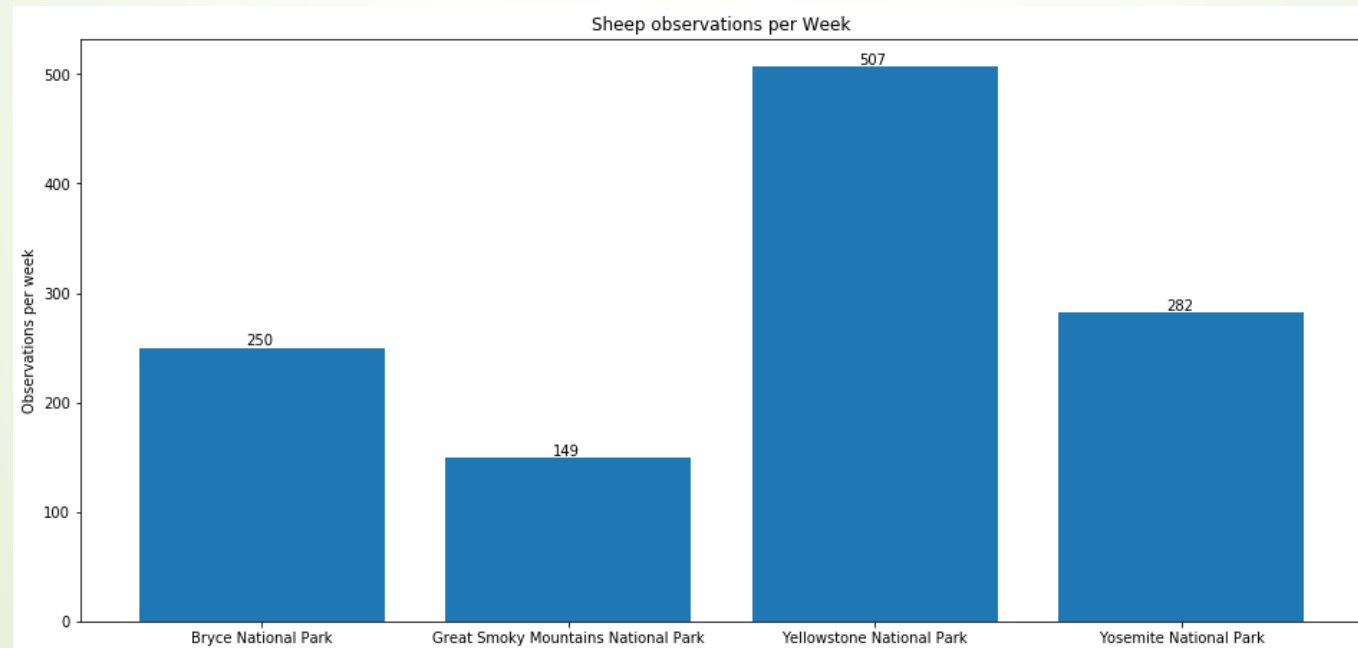
Protected Species

- The number of species with each conservation status is shown in the graph to the right
- The graph uses an exponential scale (See page 8 for standard scale)



Sheep Observations

- Sheep were observed at 4 different national parks over the last 7 days
- The number of Sheep Observed at each Park is shown in the graph below



Foot and Mouth Disease

- Scientists want to reduce the amount of foot and mouth disease by at least 5 percent
- They will need to observe 510 sheep from each park
- An estimate of the number of weeks it will take to sample enough sheep at each park is shown in the table to the right

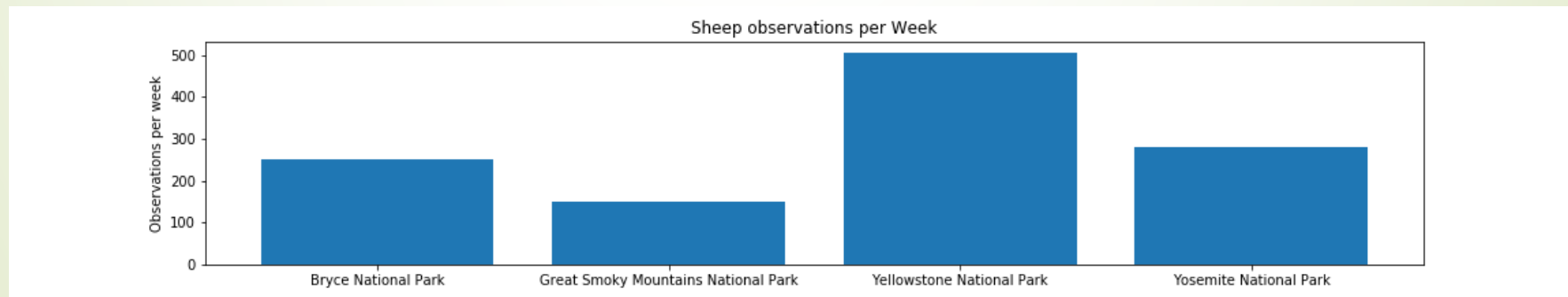
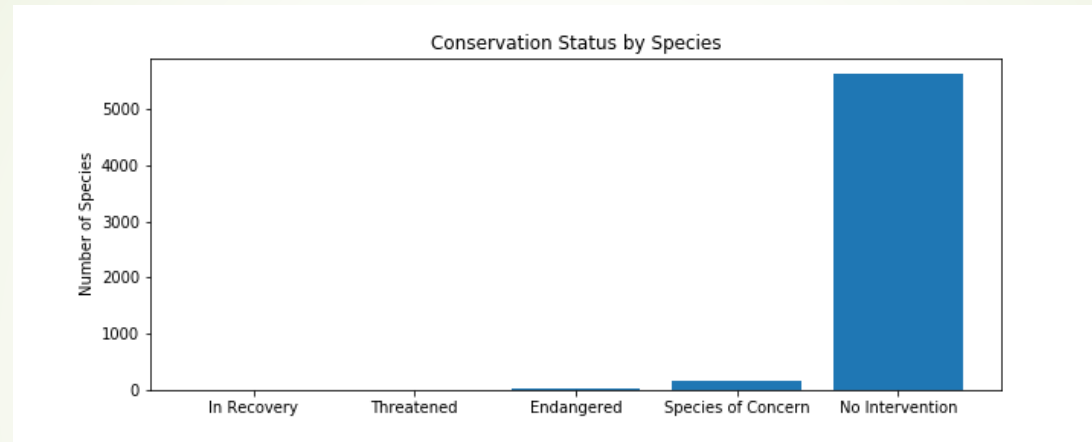
Park Name ▼	Number of Weeks ▼
Bryce National Park	2.0
Great Smoky Mountains National Park	3.4
Yellowstone National Park	1.0
Yosemite National Park	1.8



Additional Information



Graphs assigned in the project



Types of Sheep

Category▼	Scientific Name▼	Common Names▼	Conservation Status▼
Mammal	Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention
Mammal	Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern
Mammal	Ovis canadensis sierrae	Sierra Nevada Bighorn Sheep	Endangered

Protected Species Graph

- Here's a graph that shows the amount and percent of protected species of each category
- I don't know why the percent of endangered birds didn't round

