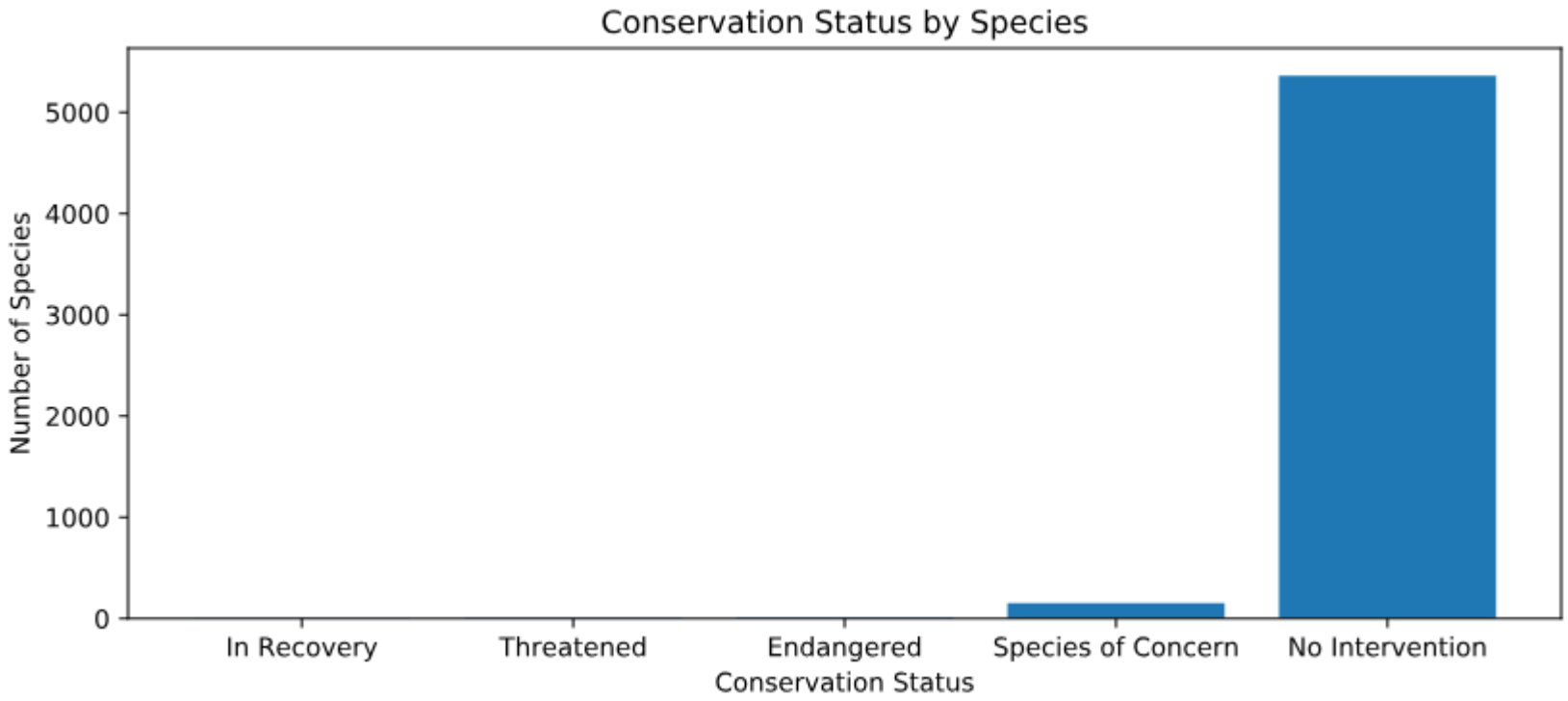
Biodiversity for the National Parks

National Parks Service

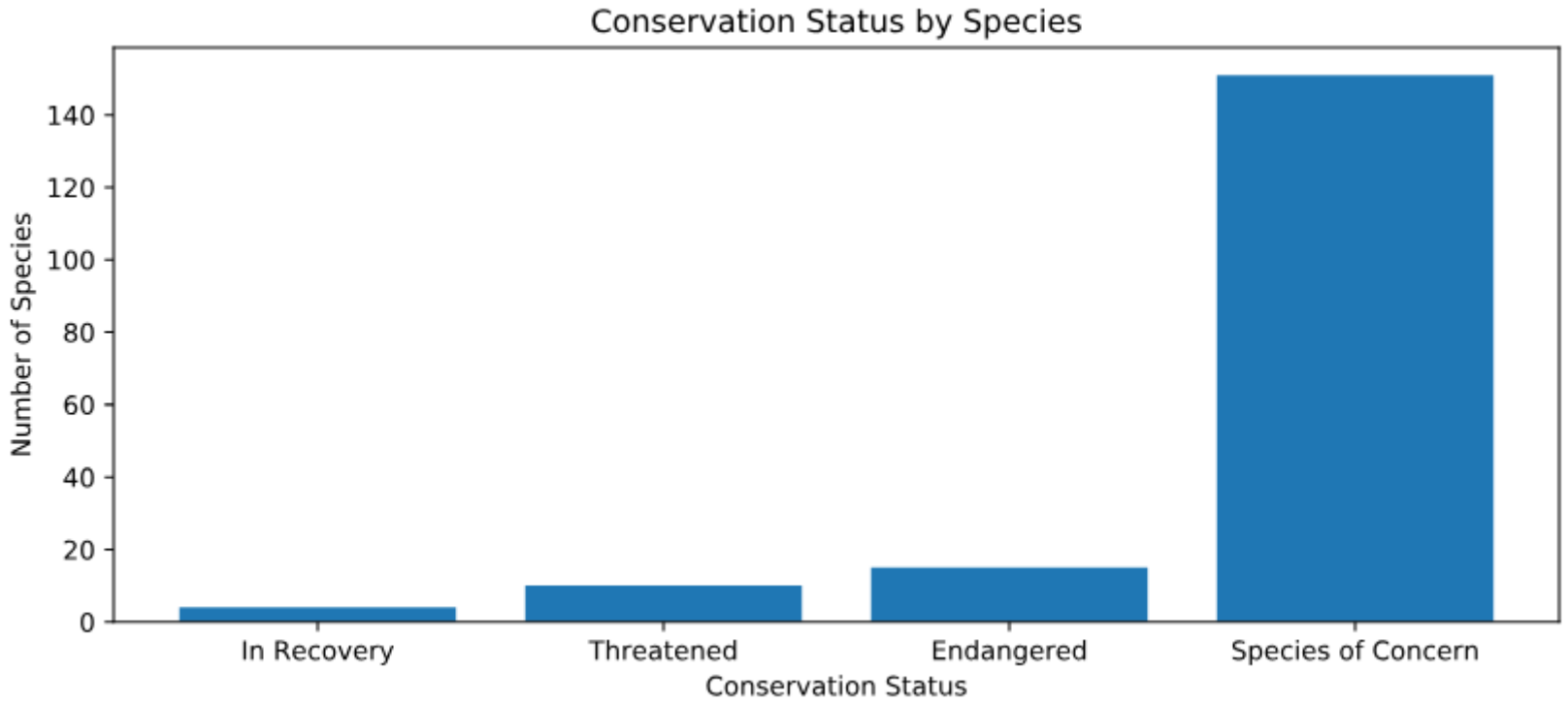
Conservation status by species – Table species_info.csv

	Conservation Status	Scientific Name (nunique)
0	Endangered	15
1	In Recovery	4
2	No Intervention	5363
3	Species of Concern	151
4	Threatened	10

Conservation status by species – Bar chart species_info.csv



Conservation status by species – Bar chart species_info.csv



Are certain types of species more likely to be endangered?

	Category	Not Protected	Protected	Percent Protected (%)
0	Amphibian	73	7	8.75
1	Bird	442	79	15.16
2	Fish	116	11	8.66
3	Mammal	176	38	17.76
4	Nonvascular Plant	328	5	1.50
5	Reptile	74	5	6.33
6	Vascular Plant	4424	46	1.03

Are certain types of species more likely to be endangered? Chi-Square Test

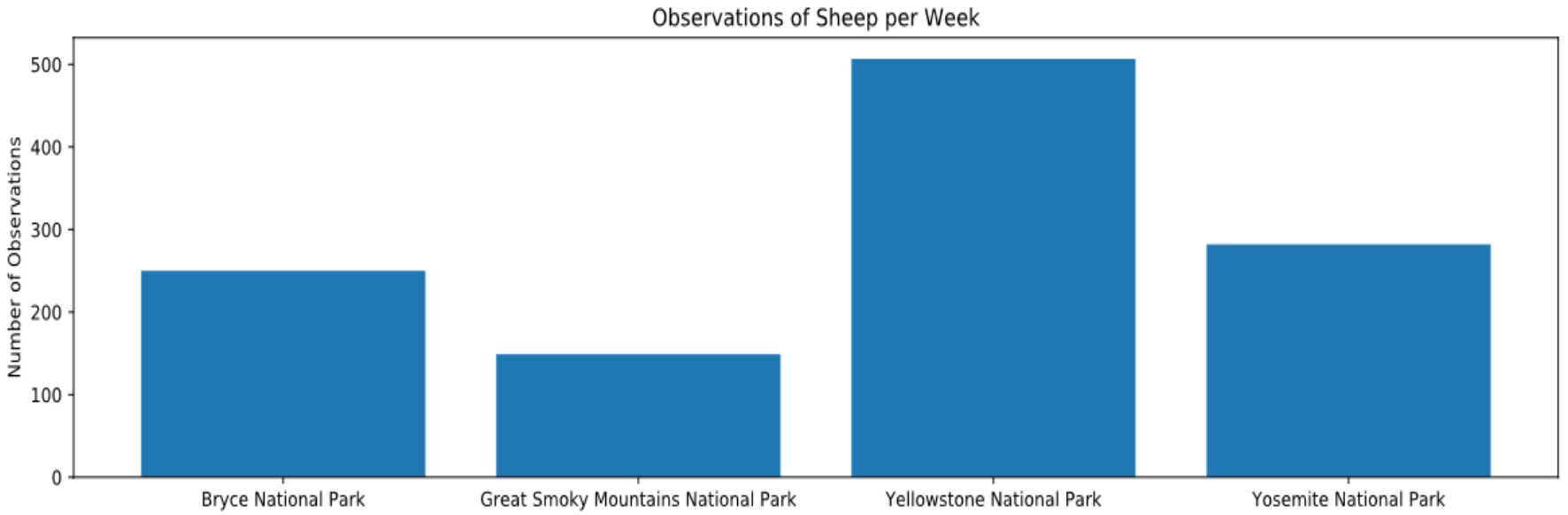
- Chi-Square(Mammal vs Bird): P value = 0.688 (Not significant)
- We found a p-value of ~0.688, so we can conclude that the difference between the percentages of protected birds and mammals is not significant and is a result of chance.

- Chi-Square(Reptile vs Mammal): P value = 0.034 (Significant)
- We found a p-value of ~0.034, therefore, we can conclude that certain types of species are more likely to be endangered than others.
- Based on the significance calculations mammals are more likely to be endangered than reptiles. As such a greater emphasis should be placed on protection of mammals over reptiles.

Sheep Species

	Category	Scientific_name	Common_names	Conservation_status	Is_protected	Is_sheep
3	Mammal	Ovis aries	Domestic Sheep, Mouflon, Red Sheep, Sheep (Feral)	No Intervention	False	True
3014	Mammal	Ovis canadensis	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
4446	Mammal	Ovis Canadensis sierrae	Sierra Nevada Bighorn Sheep	Endangered	True	True

Observations of sheep across national parks



Foot and Mouth Reduction Effort - Sample Size Determination

- Test whether or not foot and mouth reduction effort is working.
- Detect reductions of at least 5 percentage points.
- Last year it was recorded that 15% of sheep at Bryce National Park have foot and mouth disease.
- Minimum Detectable Effect: 33.33%
- Baseline: 15%
- Statistical significance: 90%
- Sample Size: 870
- Yellowstone National Park observation time = ~1.7weeks
- Bryce National Park = ~3.5weeks