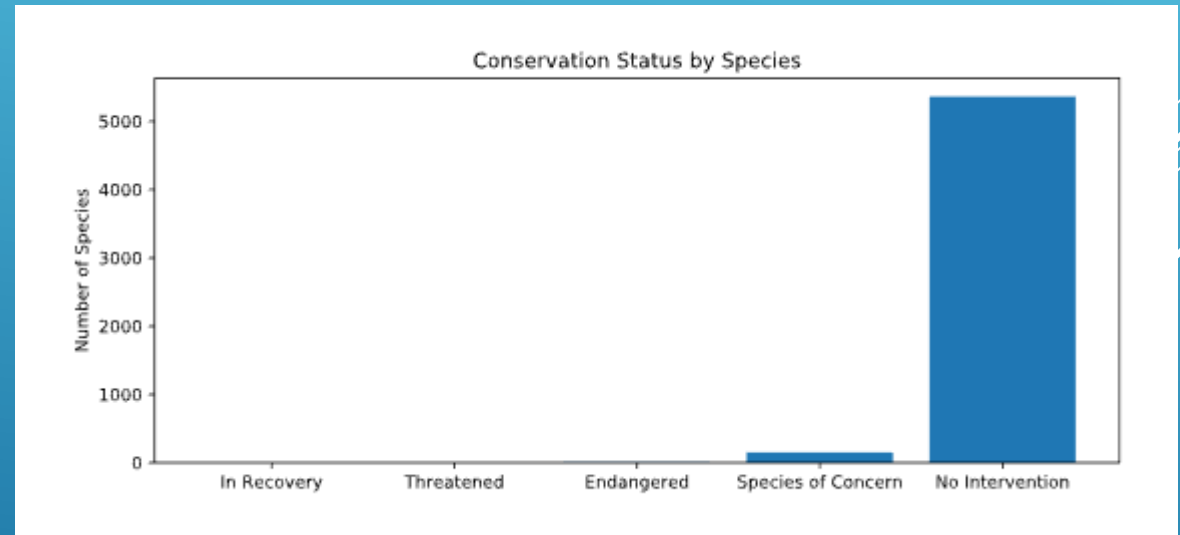# BIODIVERSITY CAPSTONE PROJECT

- By far the largest segment is No Intervention. Endangered species makeup a very small subset of the groups.

	conservation_status	scientific_name
0	Endangered	15
1	In Recovery	4
2	No Intervention	5363
3	Species of Concern	151
4	Threatened	10

Conservation Status by Species

CONSERVATION STATUS

- Based on the contingency pval being >= 0.05 the team is able to conclude that there is no statistically significant difference between the percentages of protected birds and mammals endangered.

- However based on the reptile-mammal pval being < 0.05 there is a statistically significant difference. This means the chance of being endangered for reptiles and mammals is different.

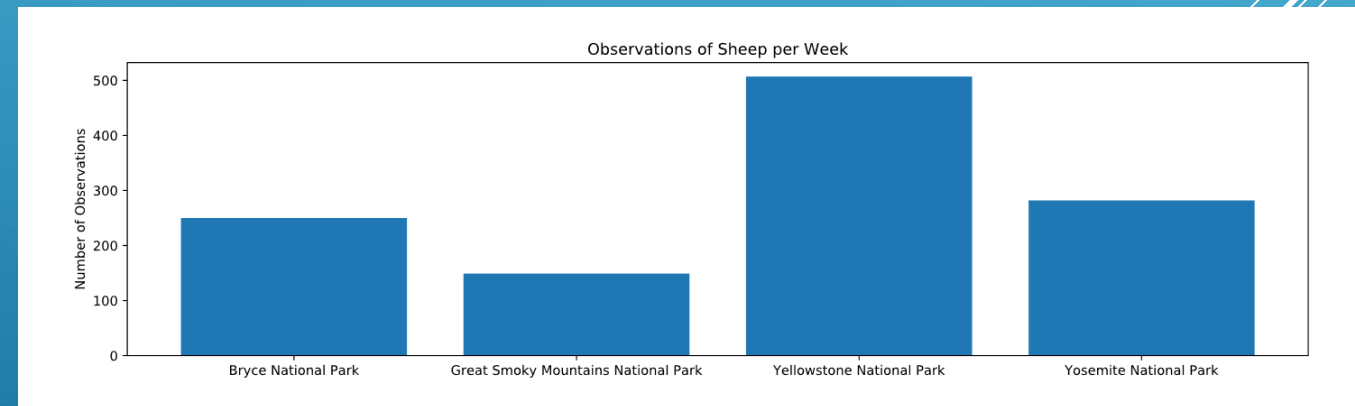|	category	not_protected	protected	percent_protected
0	Amphibian	72	7	0.088608
1	Bird	413	75	0.153689
2	Fish	115	11	0.087302
3	Mammal	146	30	0.170455
4	Nonvascular Plant	328	5	0.015015
5	Reptile	73	5	0.064103
6	Vascular Plant	4216	46	0.010793

```
contingency pval: 0.687594809666
pval reptile mammal: 0.0383555902297
```

PROTECTED SPECIES

- Yellowstone has almost double the sheep sightings of all other parks

- Based the teams results it would take approximately 1.7 weeks of observations in Yellowstone and roughly 3.5 weeks observing in Bryce with the required sample size of 870.

	scientific_name	park_name	observations	category	common_names	conservation_status	is_protected	is_sheep
0	Ovis canadensis	Yellowstone National Park	219	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
1	Ovis canadensis	Bryce National Park	109	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
2	Ovis canadensis	Yosemite National Park	117	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
3	Ovis canadensis	Great Smoky Mountains National Park	48	Mammal	Bighorn Sheep, Bighorn Sheep	Species of Concern	True	True
4	Ovis canadensis sierrae	Yellowstone National Park	67	Mammal	Sierra Nevada Bighorn Sheep	Endangered	True	True

	park_name	observations
0	Bryce National Park	250
1	Great Smoky Mountains National Park	149
2	Yellowstone National Park	507
3	Yosemite National Park	282

Observations of Sheep per Week

SHEEP SIGHTINGS & FOOT AND MOUTH DISEASE

```
baseline: 15
minimum_detectable_effect: 33.3333333333
sample_size_per_variant: 870
yellowstone_weeks_observing: 1.71597633136
bryce_weeks_observing: 3.48
```

- All code was completed on codeacdemy and is saved in the codeacdemy environment.

THANK YOU