

# Biodiversity Data Analysis

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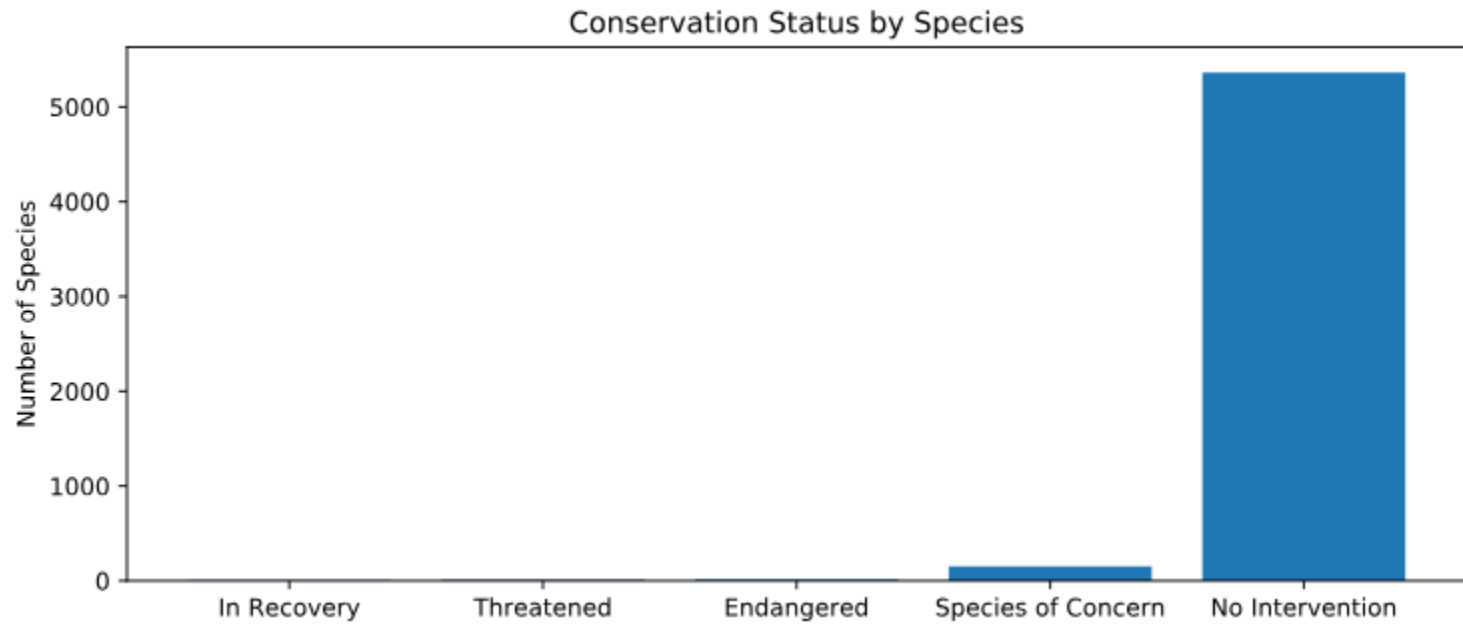
# Species Data

A dataset with information about different species found in National Parks, including:

- Category, scientific name, common name and conservation status.
- Number of different species = 5541
- Type of species = ['Mammal' 'Bird' 'Reptile' 'Amphibian' 'Fish' 'Vascular Plant' 'Nonvascular Plant']
- Number of species per conservation status:

conservation_status	# scientific_name
Endangered	15
In Recovery	4
No Intervention	5363
Species of Concern	151
Threatened	10

# Conservation Status Chart



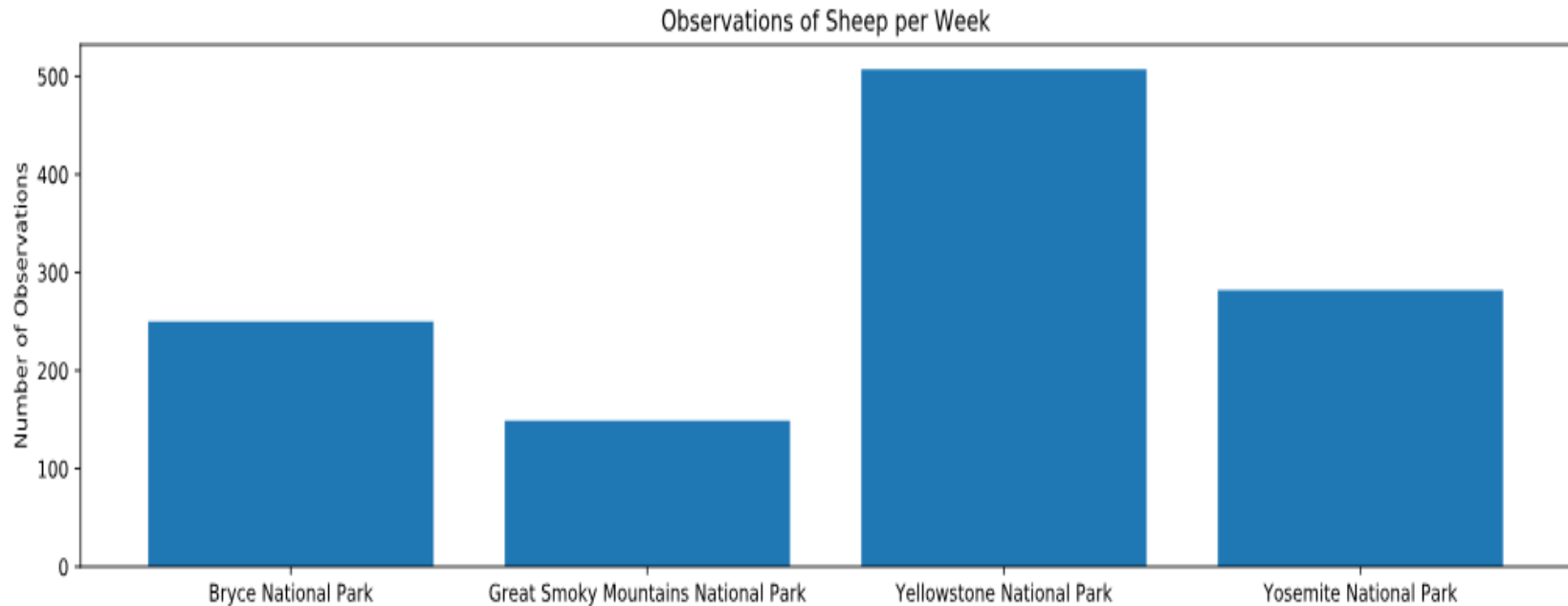
# Endangered Species

- Mammal is the most endangered specie. However, the difference between Mammal and Birds isn't significant ( $pval = 0.68$ ), but versus Reptile is significant ( $pval = 0.03$ ) as per chi square test.
- Conservationists should focus equally on Mammals and Birds, as these are the two most endangered species . The differences in their percent protected are possibly due to chance.

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

# Sheep Observations per Week

- Baseline = 15% of sheep at Bryce National Park have foot and mouth disease.



# Sample Size Determination

script.py

```
1 baseline = 15
2
3 minimum_detectable_effect = 100*5./15
4
5 sample_size_per_variant = 870
6
7 yellowstone_weeks_observing = sample_size_per_variant/507.
8
9 bryce_weeks_observing = sample_size_per_variant/250.
10
11 print(yellowstone_weeks_observing)
12
13 print(bryce_weeks_observing)
```

Run

1.71597633136  
3.48

https://s3.amazonaws.com/codecademy-content/cour

Baseline conversion rate:

15

%

Statistical significance:

85%

90%

95%

Minimum detectable effect:

33.33

%

Sample size:

870

# Number of Weeks

- Scientists need to observe sheep at Bryce National and Yellowstone for 1.7 and 3.4 weeks. In order to observe enough sheep for the foot and mouth study.