

# Biodiversity for the National Parks

**Capstone Option 2**

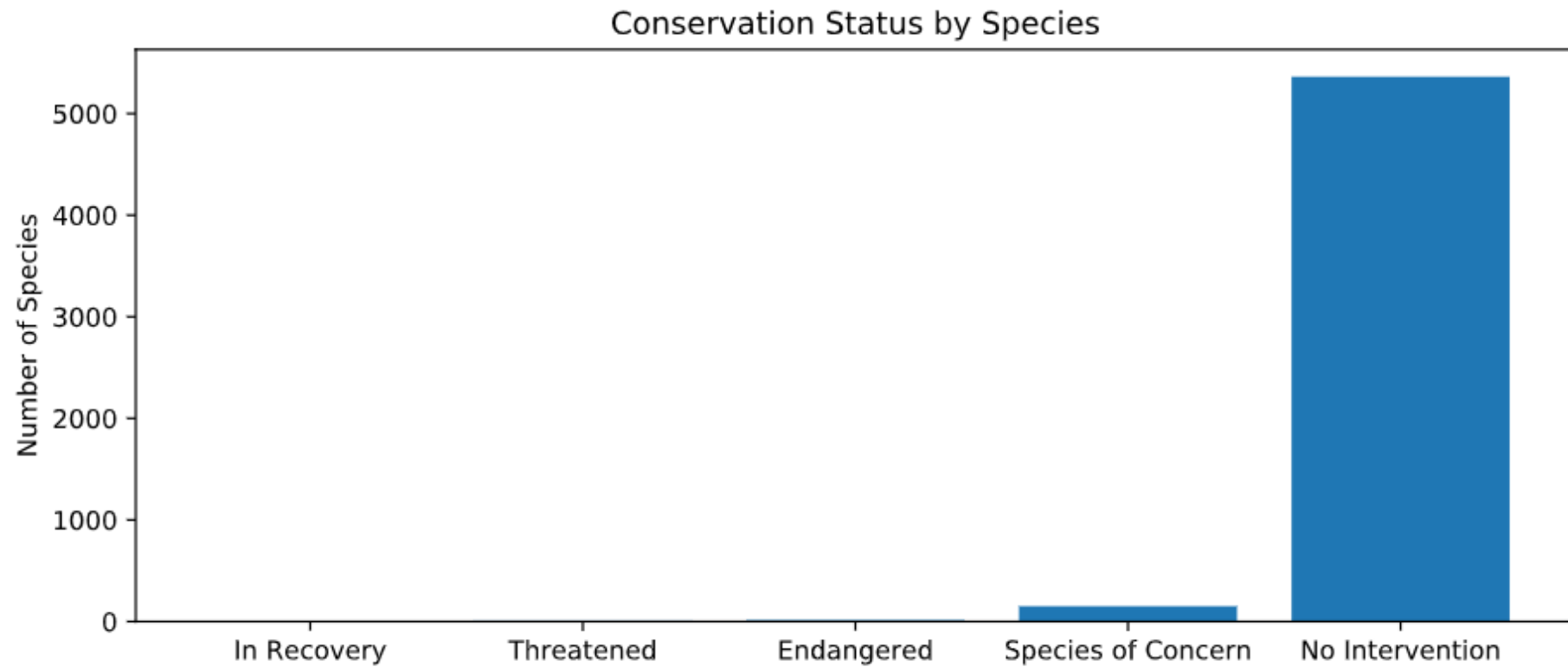
# Species Information

Endangered Species for Categories

# Conservation Status Species Distribution

Conservation Status	Number of Species
Endangered	15
In Recovery	4
No Intervention	5363
Species of Concern	151
Threatened	10

# Conservation Status Species Distribution



# Percent Protected for each Species Category

Species Category	Not Protected	Protected	Percent Protected
Amphibian	73	7	8.8 %
Bird	442	79	15.2 %
Fish	116	11	8.7 %
Mammal	176	38	17.8 %
Nonvascular Plant	328	5	1.5 %
Reptile	74	5	6.3 %
Vascular Plant	4424	46	1.0 %

# Most likely species to be protected

- Mammals and birds are the most likely species groups to be protected.
- Using a Chi-squared test with  $p\text{-val} \sim 0.68$ , the difference is not significant because it's greater than 0.05, so we can not conclude that one is more likely than the other to be endangered.
- However, checking Chi-squared test between Mammals and Reptiles shows  $p\text{-val} \sim 0.38$  which means there is a significant difference between those species indicating that some species categories are indeed more likely than others to be endangered.

# Effort to Reduce Foot and Mouth

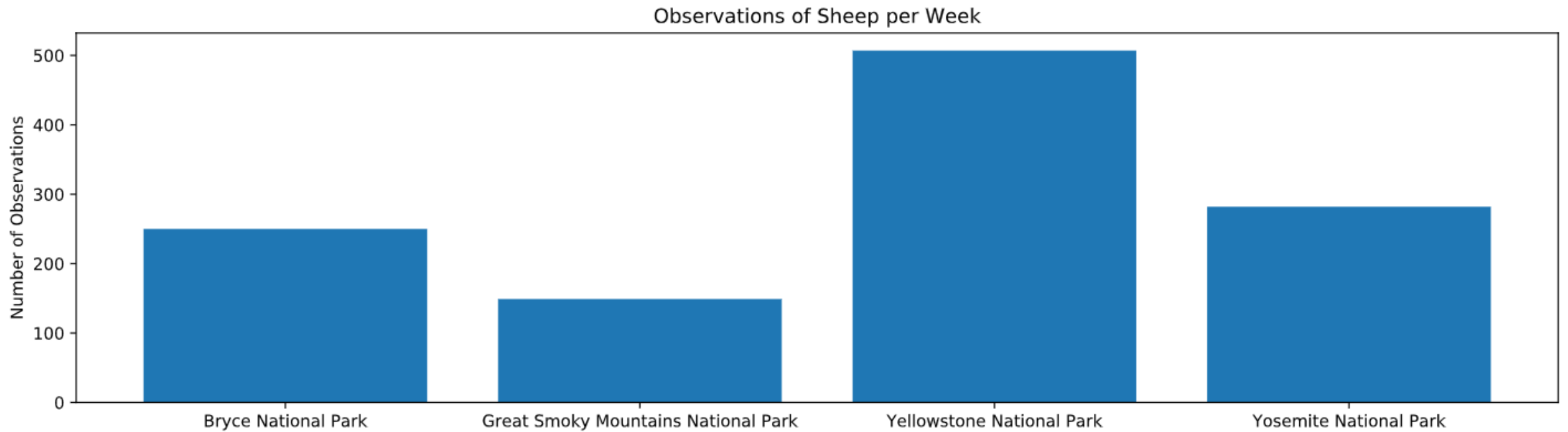
Using Sheep Observation Data from Four National Parks

# One Week Sheep Observations by Park

Park Name	Number of Sheep Observations per week
Bryce National Park	250
Great Smoky Mountains National Park	149
Yellowstone National Park	507
Yosemite National Park	282



# One Week Sheep Observations by Park



# Foot and Mouth Reduction Effort

**Baseline conversion rate = 15%**

The incidence of Foot and Mouth at Bryce National Park is 15%

**90% Level of Significance**

The Default Level of Significance

**33.33% Minimum Detectable Effect** (to detect 5% reduction)

The minimum detectable effort required to detect a 5% reduction

**Sample Size = 870**

The number of observations to achieve the detectable effect

# Time Needed to Detect Significant Reduction

Park Name	Number of Weeks
Bryce National Park	3.48
Great Smoky Mountains National Park	5.84
Yellowstone National Park	1.72
Yosemite National Park	3.09