

Biodiversity for National Parks

March 2018



Capstone Project

EXPERIENCE YOUR AMERICA

Different species at various parks

The data set included:

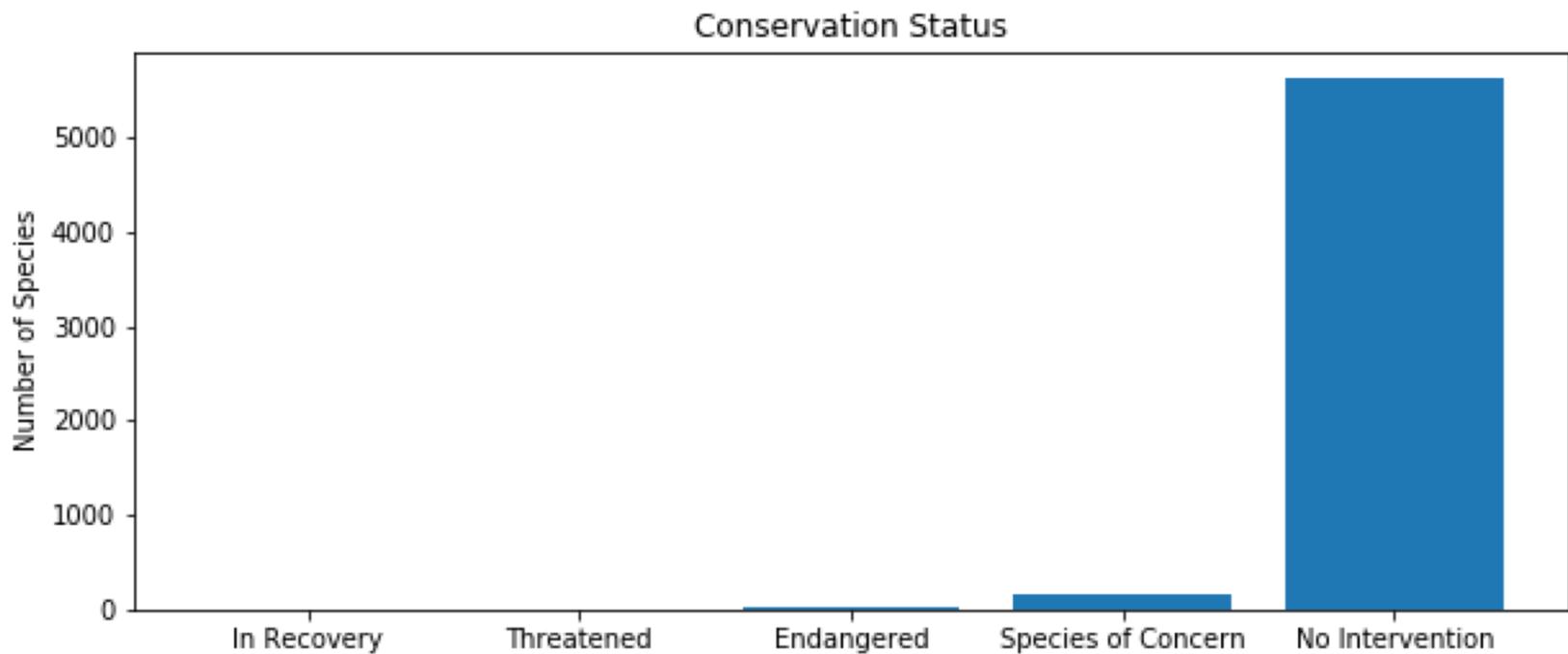
- The scientific name of each species
- The common names of each species
- The species conservation status

7 different species was noted

Species	Quantity
Vascular Plant	4470
Bird	521
Nonvascular Plant	333
Mammal	214
Fish	127
Amphibian	80
Reptile	79

There are 161 species of concern and 16 endangered. Also important that 10 of the species are on the brink of becoming endangered and 4 is on the road to recover.

Conservation Status of Species



EXPERIENCE YOUR AMERICA

Recommendations

Recommendations for endangered and threatened species:

- Immediate study of habitat (Habitat conservation)
- Follow plan of testing fertility in species
- Research artificial insemination and see if this could be a viable option
- To make sure that the endangered and threatened species are treated with least stress involved

Articles to consider:

- <https://www.nap.edu/read/10978/chapter/10>
- <https://www.ncbi.nlm.nih.gov/books/NBK232378/>
- <http://redlist.sanbi.org/eiaguidelines.php>

Protection: How many species are currently protected

Species	Not Protected	Protected	Percentage
Amphibian	72	7	8.86%
Bird	413	75	15.36%
Fish	115	11	8.73%
Mammal	146	30	17.04%
Non Vascular Plant	328	5	1.5%
Reptile	73	5	6.4%
Vascular Plant	4216	46	1.07%

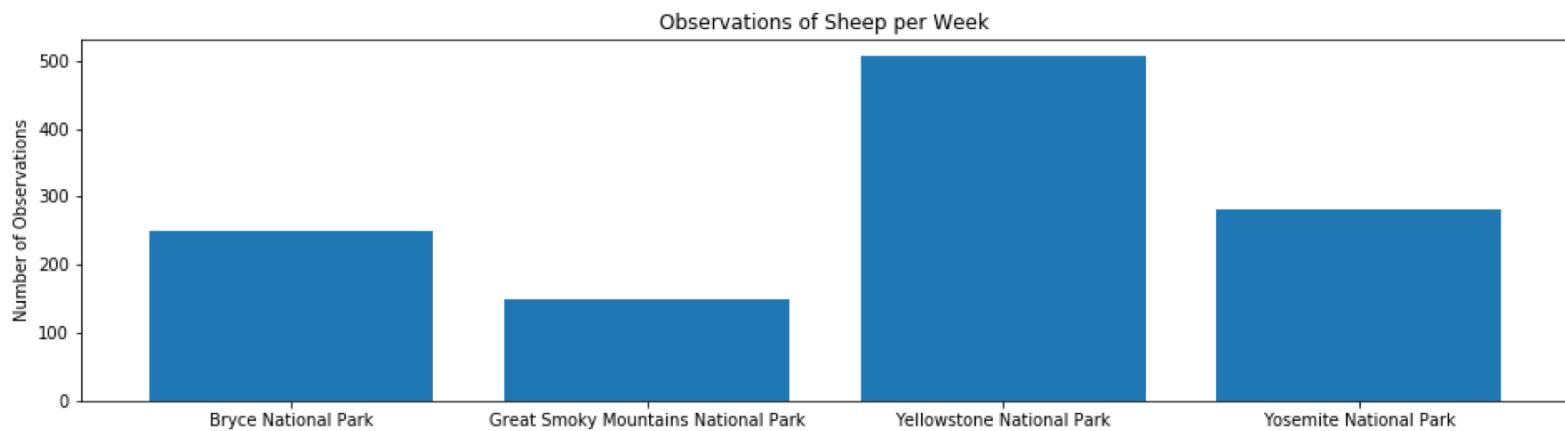
Note that there are significant differences like for example between Reptile and Mammal

Sample size determination of foot and mouth disease (sheep)



Total Sheep Observations (across all three species):

- Bryce National Park 250
- Great Smoky Mountains National Park 149
- Yellowstone National Park 507
- Yosemite National Park 282



EXPERIENCE YOUR AMERICA

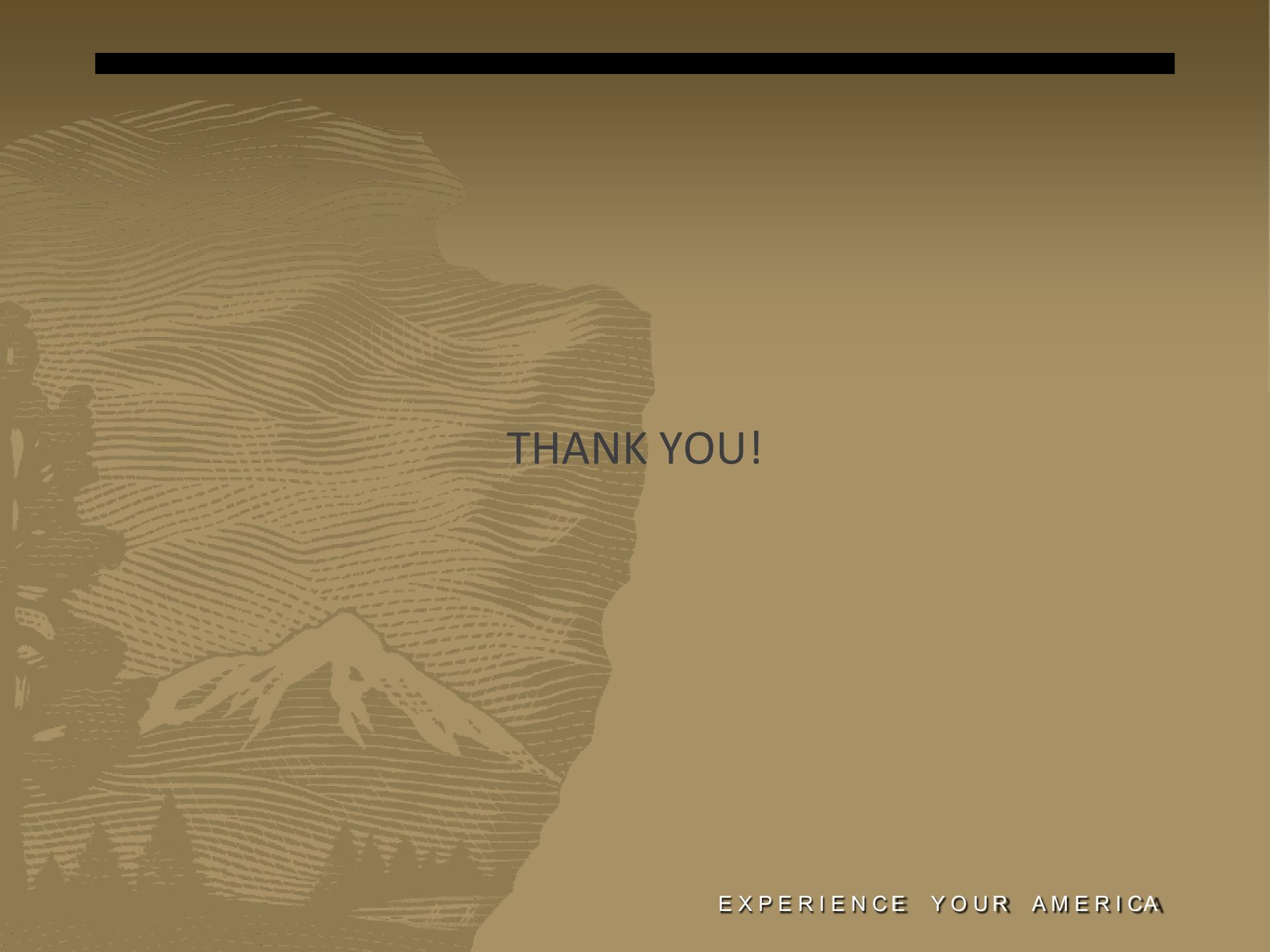
Program to reduce the rate of foot and mouth disease

Park rangers at Yellowstone National Park have been running a program to reduce the rate of foot and mouth disease at that park.

The amount of time it will take in the following Parks:

- | | |
|------------------------|---------|
| • Bryce National Park | 2 Weeks |
| • Yellow National Park | 1 Week |

The above was calculated with a 90% significance level.



THANK YOU!

EXPERIENCE YOUR AMERICA